

# SEQUENCE LISTING

<110> Wright, Susan C.  
Larrick, James W.  
Nock, Steffen R.  
Wilson, David S.

<120> Cell-Killing Molecules and Methods of Use Thereof

<130> ABSALUS-08602

<160> 81

<170> PatentIn version 3.2

<210> 1

<211> 314

<212> PRT

<213> Sus scrofa

<400> 1

Ala	Lys	Val	Ala	Val	Leu	Gly	Ala	Ser	Gly	Gly	Ile	Gly	Gln	Pro	Leu
1				5					10					15	

Ser	Leu	Leu	Leu	Lys	Asn	Ser	Pro	Leu	Val	Ser	Arg	Leu	Thr	Leu	Tyr
			20					25					30		

Asp	Ile	Ala	His	Thr	Pro	Gly	Val	Ala	Ala	Asp	Leu	Ser	His	Ile	Glu
		35					40					45			

Thr	Arg	Ala	Thr	Val	Lys	Gly	Tyr	Leu	Gly	Pro	Glu	Gln	Leu	Pro	Asp
	50					55						60			

Cys	Leu	Lys	Gly	Cys	Asp	Val	Val	Val	Ile	Pro	Ala	Gly	Val	Pro	Arg
65					70					75					80

Lys	Pro	Gly	Met	Thr	Arg	Asp	Asp	Leu	Phe	Asn	Thr	Asn	Ala	Thr	Ile
				85					90					95	

Val	Ala	Thr	Leu	Thr	Ala	Ala	Cys	Ala	Gln	His	Cys	Pro	Asp	Ala	Met
			100					105					110		

Ile	Cys	Ile	Ile	Ser	Asn	Pro	Val	Asn	Ser	Thr	Ile	Pro	Ile	Thr	Ala
		115					120					125			

Glu	Val	Phe	Lys	Lys	His	Gly	Val	Tyr	Asn	Pro	Asn	Lys	Ile	Phe	Gly
	130					135					140				

Val	Thr	Thr	Leu	Asp	Ile	Val	Arg	Ala	Asn	Ala	Phe	Val	Ala	Glu	Leu
145					150					155					160

Lys Gly Leu Asp Pro Ala Arg Val Ser Val Pro Val Ile Gly Gly His  
 165 170 175

Ala Gly Lys Thr Ile Ile Pro Leu Ile Ser Gln Cys Thr Pro Lys Val  
 180 185 190

Asp Phe Pro Gln Asp Gln Leu Ser Thr Leu Thr Gly Arg Ile Gln Glu  
 195 200 205

Ala Gly Thr Glu Val Val Lys Ala Lys Ala Gly Ala Gly Ser Ala Thr  
 210 215 220

Leu Ser Met Ala Tyr Ala Gly Ala Arg Phe Val Phe Ser Leu Val Asp  
 225 230 235 240

Ala Met Asn Gly Lys Glu Gly Val Val Glu Cys Ser Phe Val Lys Ser  
 245 250 255

Gln Glu Thr Asp Cys Pro Tyr Phe Ser Thr Pro Leu Leu Leu Gly Lys  
 260 265 270

Lys Gly Ile Glu Lys Asn Leu Gly Ile Gly Lys Ile Ser Pro Phe Glu  
 275 280 285

Glu Lys Met Ile Ala Glu Ala Ile Pro Glu Leu Lys Ala Ser Ile Lys  
 290 295 300

Lys Gly Glu Glu Phe Val Lys Asn Met Lys  
 305 310

<210> 2  
 <211> 72  
 <212> PRT  
 <213> Sus scrofa

<400> 2

Lys Ala Lys Ala Gly Ala Gly Ser Ala Thr Leu Ser Met Ala Tyr Ala  
 1 5 10 15

Gly Ala Arg Phe Val Phe Ser Leu Val Asp Ala Met Asn Gly Lys Glu  
 20 25 30

Gly Val Val Glu Cys Ser Phe Val Lys Ser Gln Glu Thr Asp Cys Pro  
 35 40 45

Tyr Phe Ser Thr Pro Leu Leu Leu Gly Lys Lys Gly Ile Glu Lys Asn  
 50 55 60

Leu Gly Ile Gly Lys Ile Ser Pro  
 65 70

<210> 3  
 <211> 100  
 <212> PRT  
 <213> Sus scrofa

<400> 3

Lys Ala Lys Ala Gly Ala Gly Ser Ala Thr Leu Ser Met Ala Tyr Ala  
 1 5 10 15

Gly Ala Arg Phe Val Phe Ser Leu Val Asp Ala Met Asn Gly Lys Glu  
 20 25 30

Gly Val Val Glu Cys Ser Phe Val Lys Ser Gln Glu Thr Asp Cys Pro  
 35 40 45

Tyr Phe Ser Thr Pro Leu Leu Leu Gly Lys Lys Gly Ile Glu Lys Asn  
 50 55 60

Leu Gly Ile Gly Lys Ile Ser Pro Phe Glu Glu Lys Met Ile Ala Glu  
 65 70 75 80

Ala Ile Pro Glu Leu Lys Ala Ser Ile Lys Lys Gly Glu Glu Phe Val  
 85 90 95

Lys Asn Met Lys  
 100

<210> 4  
 <211> 338  
 <212> PRT  
 <213> Homo sapiens

<400> 4

Met Leu Ser Ala Leu Ala Arg Pro Ala Ser Ala Ala Leu Arg Arg Ser  
 1 5 10 15

Phe Ser Thr Ser Ala Gln Asn Asn Ala Lys Val Ala Val Leu Gly Ala  
 20 25 30

Ser Gly Gly Ile Gly Gln Pro Leu Ser Leu Leu Leu Lys Asn Ser Pro  
 35 40 45

Leu Val Ser Arg Leu Thr Leu Tyr Asp Ile Ala His Thr Pro Gly Val  
 50 55 60

Ala Ala Asp Leu Ser His Ile Glu Thr Lys Ala Ala Val Lys Gly Tyr  
 65 70 75 80

Leu Gly Pro Glu Gln Leu Pro Asp Cys Leu Lys Gly Cys Asp Val Val  
 85 90 95

Val Ile Pro Ala Gly Val Pro Arg Lys Pro Gly Met Thr Arg Asp Asp  
 100 105 110

Leu Phe Asn Thr Asn Ala Thr Ile Val Ala Thr Leu Thr Ala Ala Cys  
 115 120 125

Ala Gln His Cys Pro Glu Ala Met Ile Cys Val Ile Ala Asn Pro Val  
 130 135 140

Asn Ser Thr Ile Pro Ile Thr Ala Glu Val Phe Lys Lys His Gly Val  
 145 150 155 160

Tyr Asn Pro Asn Lys Ile Phe Gly Val Thr Thr Leu Asp Ile Val Arg  
 165 170 175

Ala Asn Thr Phe Val Ala Glu Leu Lys Gly Leu Asp Pro Ala Arg Val  
 180 185 190

Asn Val Pro Val Ile Gly Gly His Ala Gly Lys Thr Ile Ile Pro Leu  
 195 200 205

Ile Ser Gln Cys Thr Pro Lys Val Asp Phe Pro Gln Asp Gln Leu Thr  
 210 215 220

Ala Leu Thr Gly Arg Ile Gln Glu Ala Gly Thr Glu Val Val Lys Ala  
 225 230 235 240

Lys Ala Gly Ala Gly Ser Ala Thr Leu Ser Met Ala Tyr Ala Gly Ala  
 245 250 255

Arg Phe Val Phe Ser Leu Val Asp Ala Met Asn Gly Lys Glu Gly Val  
 260 265 270

Val Glu Cys Ser Phe Val Lys Ser Gln Glu Thr Glu Cys Thr Tyr Phe  
 275 280 285

Ser Thr Pro Leu Leu Leu Gly Lys Lys Gly Ile Glu Lys Asn Leu Gly  
 290 295 300

Ile Gly Lys Val Ser Ser Phe Glu Glu Lys Met Ile Ser Asp Ala Ile  
 305 310 315 320

Pro Glu Leu Lys Ala Ser Ile Lys Lys Gly Glu Asp Phe Val Lys Thr  
 325 330 335

Leu Lys

<210> 5  
 <211> 1017  
 <212> DNA  
 <213> Homo sapiens

<400> 5  
 atgctctccg ccctcgcccg gcctgccagc gctgctctcc gccgcagctt cagcacctcg 60  
 gccagaaca atgctaaagt agctgtgcta ggggcctctg gaggcacatcg gcagccactt 120  
 tcactttctcc tgaagaacag ccccttggtg agccgcctga ccctctatga tatcgcgcac 180  
 acacccggag tggccgcaga tctgagccac atcgagacca aagccgctgt gaaaggctac 240  
 ctcggaacctg aacagctgcc tgactgcctg aaaggttggtg atgtggtagt tattccggct 300  
 ggagtcccca gaaagccagg catgaccccg gacgacctgt tcaacaccaa tgccacgatt 360  
 gtggccaccc tgaccgctgc ctgtgccag cactgcccgg aagccatgat ctgcgtcatt 420  
 gccaatccgg ttaattccac catccccatc acagcagaag ttttcaagaa gcatggagtg 480  
 tacaacccca acaaaatctt cggcgtgacg accctggaca tcgtcagagc caacaccttt 540  
 gttgcagagc tgaagggttt ggatccagct cgagtcaacg tccctgtcat tgggtggccat 600  
 gctgggaaga ccatcatccc cctgatctct cagtgcaccc ccaaggtgga ctttccccag 660  
 gaccagctga cagcactcac tgggcggatc caggaggccg gcacggaggt ggtcaaggct 720  
 aaagccggag caggctctgc caccctctcc atggcgatg ccggcgcccc ctttgtcttc 780  
 tcccttggtg atgcaatgaa tggaaaggaa ggtgttggtg aatgttcctt cgtaagtca 840  
 caggaaacgg aatgtaccta cttctccaca ccgctgctgc ttgggaaaaa gggcatcgag 900  
 aagaacctgg gcatcggaag agtctcctct tttgaggaga agatgatctc ggatgccatc 960  
 cccgagctga aggcctccat caagaagggg gaagatttcg tgaagaccct gaagtga 1017

<210> 6  
 <211> 72  
 <212> PRT  
 <213> Homo sapiens

<400> 6

Lys Ala Lys Ala Gly Ala Gly Ser Ala Thr Leu Ser Met Ala Tyr Ala  
 1 5 10 15

Gly Ala Arg Phe Val Phe Ser Leu Val Asp Ala Met Asn Gly Lys Glu  
 20 25 30

Gly Val Val Glu Cys Ser Phe Val Lys Ser Gln Glu Thr Glu Cys Thr  
 35 40 45

Tyr Phe Ser Thr Pro Leu Leu Leu Gly Lys Lys Gly Ile Glu Lys Asn  
 50 55 60

Leu Gly Ile Gly Lys Val Ser Ser  
 65 70

<210> 7  
 <211> 100  
 <212> PRT  
 <213> Homo sapiens

<400> 7

Lys Ala Lys Ala Gly Ala Gly Ser Ala Thr Leu Ser Met Ala Tyr Ala  
 1 5 10 15

Gly Ala Arg Phe Val Phe Ser Leu Val Asp Ala Met Asn Gly Lys Glu  
 20 25 30

Gly Val Val Glu Cys Ser Phe Val Lys Ser Gln Glu Thr Glu Cys Thr  
 35 40 45

Tyr Phe Ser Thr Pro Leu Leu Leu Gly Lys Lys Gly Ile Glu Lys Asn  
 50 55 60

Leu Gly Ile Gly Lys Val Ser Ser Phe Glu Glu Lys Met Ile Ser Asp  
 65 70 75 80

Ala Ile Pro Glu Leu Lys Ala Ser Ile Lys Lys Gly Glu Asp Phe Val  
 85 90 95

Lys Thr Leu Lys  
 100

<210> 8  
 <211> 361  
 <212> PRT  
 <213> Homo sapiens

<400> 8

Met Ala Ala Pro Arg Ala Gly Arg Gly Ala Gly Trp Ser Leu Arg Ala  
 1 5 10 15

Trp Arg Ala Leu Gly Gly Ile Arg Trp Gly Arg Arg Pro Arg Leu Thr  
 20 25 30

Pro Asp Leu Arg Ala Leu Leu Thr Ser Gly Thr Ser Asp Pro Arg Ala  
 35 40 45

Arg Val Thr Tyr Gly Thr Pro Ser Leu Trp Ala Arg Leu Ser Val Gly  
 50 55 60

Val Thr Glu Pro Arg Ala Cys Leu Thr Ser Gly Thr Pro Gly Pro Arg  
 65 70 75 80

Ala Gln Leu Thr Ala Val Thr Pro Asp Thr Arg Thr Arg Glu Ala Ser  
 85 90 95

Glu Asn Ser Gly Thr Arg Ser Arg Ala Trp Leu Ala Val Ala Leu Gly  
 100 105 110

Ala Gly Gly Ala Val Leu Leu Leu Leu Trp Gly Gly Gly Arg Gly Pro  
 115 120 125

Pro Ala Val Leu Ala Ala Val Pro Ser Pro Pro Pro Ala Ser Pro Arg  
 130 135 140

Ser Gln Tyr Asn Phe Ile Ala Asp Val Val Glu Lys Thr Ala Pro Ala  
 145 150 155 160

Val Val Tyr Ile Glu Ile Leu Asp Arg His Pro Phe Leu Gly Arg Glu  
 165 170 175

Val Pro Ile Ser Asn Gly Ser Gly Phe Val Val Ala Ala Asp Gly Leu  
 180 185 190

Ile Val Thr Asn Ala His Val Val Ala Asp Arg Arg Arg Val Arg Val  
 195 200 205

Arg Leu Leu Ser Gly Asp Thr Tyr Glu Ala Val Val Thr Ala Val Asp  
 210 215 220

Pro Val Ala Asp Ile Ala Thr Leu Arg Ile Gln Thr Lys Phe Gly Asn  
225 230 235 240

Ser Gly Gly Pro Leu Val Asn Leu Asp Gly Glu Val Ile Gly Val Asn  
245 250 255

Thr Met Lys Val Thr Ala Gly Ile Ser Phe Ala Ile Pro Ser Asp Arg  
260 265 270

Leu Arg Glu Phe Leu His Arg Gly Glu Lys Lys Asn Ser Ser Ser Gly  
275 280 285

Ile Ser Gly Ser Gln Arg Arg Tyr Ile Gly Val Met Met Leu Thr Leu  
290 295 300

Ser Pro Arg Ala Gly Leu Arg Pro Gly Asp Val Ile Leu Ala Ile Gly  
305 310 315 320

Glu Gln Met Val Gln Asn Ala Glu Asp Val Tyr Glu Ala Val Arg Thr  
325 330 335

Gln Ser Gln Leu Ala Val Gln Ile Arg Arg Gly Arg Glu Thr Leu Thr  
340 345 350

Leu Tyr Val Thr Pro Glu Val Thr Glu  
355 360

<210> 9  
<211> 1086  
<212> DNA  
<213> Homo sapiens

<400> 9  
atggctgcgc cgagggcgagg gcgggggtgca ggctggagcc ttcgggcatg gcgggctttg 60  
ggggggcattc gctgggggag gagaccccggt ttgacccctg acctccgggc cctgctgacg 120  
tcaggaactt ctgacccccg ggcccagagt acttatggga ccccagttct ctggggcccg 180  
ttgtctgttg gggtcactga accccgagca tgccctgacgt ctgggacccc ggggtccccg 240  
gcacaactga ctgcggtgac cccagatacc aggacccggg aggcctcaga gaactctgga 300  
accggttcgc gcgcgtggct ggcgggtggcg ctgggcgctg ggggggcagt gctgttgttg 360  
ttgtggggcg ggggtcgggg tcctccggcc gtcctcgccg ccgtccctag cccgccgcc 420  
gcttctcccc ggagtcagta caacttcacg gcagatgtgg tggagaagac agcacctgcc 480  
gtggtctata tcgagatcct ggaccggcac cctttcttgg gccgcgaggt ccctatctcg 540  
aacggctcag gattcgtggt ggctgccgat gggctcattg tcaccaacgc ccatgtggtg 600



gctgatcggc gcagagtccg tgtgagactg ctaagcggcg acacgtatga ggccgtggtc 660  
acagctgtgg atccccgtggc agacatcgca acgctgagga ttcagactaa gtttggaac 720  
tctggaggtc ccctgggttaa cctggatggg gaggtgattg gagtgaacac catgaaggtc 780  
acagctggaa tctcctttgc catcccttct gatcgtcttc gagagtttct gcatcgtggg 840  
gaaaagaaga attcctcctc cggaatcagt gggccccagc ggcgctacat tggggtgatg 900  
atgctgaccc tgagtcccag ggctgggtctg cggcctgggtg atgtgatttt ggccattggg 960  
gagcagatgg taaaaaatgc tgaagatgtt tatgaagctg ttcgaaccca atcccagttg 1020  
gcagtgcaga tccggcgggg acgagaaaaca ctgaccttat atgtgacccc tgaggtcaca 1080  
gaatga 1086

<210> 10  
<211> 613  
<212> PRT  
<213> Homo sapiens

<400> 10

Met Phe Arg Cys Gly Gly Leu Ala Ala Gly Ala Leu Lys Gln Lys Leu  
1 5 10 15

Val Pro Leu Val Arg Thr Val Cys Val Arg Ser Pro Arg Gln Arg Asn  
20 25 30

Arg Leu Pro Gly Asn Leu Phe Gln Arg Trp His Val Pro Leu Glu Leu  
35 40 45

Gln Met Thr Arg Gln Met Ala Ser Ser Gly Ala Ser Gly Gly Lys Ile  
50 55 60

Asp Asn Ser Val Leu Val Leu Ile Val Gly Leu Ser Thr Val Gly Ala  
65 70 75 80

Gly Ala Tyr Ala Tyr Lys Thr Met Lys Glu Asp Glu Lys Arg Tyr Asn  
85 90 95

Glu Arg Ile Ser Gly Leu Gly Leu Thr Pro Glu Gln Lys Gln Lys Lys  
100 105 110

Ala Ala Leu Ser Ala Ser Glu Gly Glu Glu Val Pro Gln Asp Lys Ala  
115 120 125

Pro Ser His Val Pro Phe Leu Leu Ile Gly Gly Gly Thr Ala Ala Phe  
130 135 140

Ala Ala Ala Arg Ser Ile Arg Ala Arg Asp Pro Gly Ala Arg Val Leu  
 145 150 155 160  
 Ile Val Ser Glu Asp Pro Glu Leu Pro Tyr Met Arg Pro Pro Leu Ser  
 165 170 175  
 Lys Glu Leu Trp Phe Ser Asp Asp Pro Asn Val Thr Lys Thr Leu Arg  
 180 185 190  
 Phe Lys Gln Trp Asn Gly Lys Glu Arg Ser Ile Tyr Phe Gln Pro Pro  
 195 200 205  
 Ser Phe Tyr Val Ser Ala Gln Asp Leu Pro His Ile Glu Asn Gly Gly  
 210 215 220  
 Val Ala Val Leu Thr Gly Lys Lys Val Val Gln Leu Asp Val Arg Asp  
 225 230 235 240  
 Asn Met Val Lys Leu Asn Asp Gly Ser Gln Ile Thr Tyr Glu Lys Cys  
 245 250 255  
 Leu Ile Ala Thr Gly Gly Thr Pro Arg Ser Leu Ser Ala Ile Asp Arg  
 260 265 270  
 Ala Gly Ala Glu Val Lys Ser Arg Thr Thr Leu Phe Arg Lys Ile Gly  
 275 280 285  
 Asp Phe Arg Ser Leu Glu Lys Ile Ser Arg Glu Val Lys Ser Ile Thr  
 290 295 300  
 Ile Ile Gly Gly Gly Phe Leu Gly Ser Glu Leu Ala Cys Ala Leu Gly  
 305 310 315 320  
 Arg Lys Ala Arg Ala Leu Gly Thr Glu Val Ile Gln Leu Phe Pro Glu  
 325 330 335  
 Lys Gly Asn Met Gly Lys Ile Leu Pro Glu Tyr Leu Ser Asn Trp Thr  
 340 345 350  
 Met Glu Lys Val Arg Arg Glu Gly Val Lys Val Met Pro Asn Ala Ile  
 355 360 365  
 Val Gln Ser Val Gly Val Ser Ser Gly Lys Leu Leu Ile Lys Leu Lys  
 370 375 380  
 Asp Gly Arg Lys Val Glu Thr Asp His Ile Val Ala Ala Val Gly Leu  
 385 390 395 400

Glu Pro Asn Val Glu Leu Ala Lys Thr Gly Gly Leu Glu Ile Asp Ser  
 405 410 415  
 Asp Phe Gly Gly Phe Arg Val Asn Ala Glu Leu Gln Ala Arg Ser Asn  
 420 425 430  
 Ile Trp Val Ala Gly Asp Ala Ala Cys Phe Tyr Asp Ile Lys Leu Gly  
 435 440 445  
 Arg Arg Arg Val Glu His His Asp His Ala Val Val Ser Gly Arg Leu  
 450 455 460  
 Ala Gly Glu Asn Met Thr Gly Ala Ala Lys Pro Tyr Trp His Gln Ser  
 465 470 475 480  
 Met Phe Trp Ser Asp Leu Gly Pro Asp Val Gly Tyr Glu Ala Ile Gly  
 485 490 495  
 Leu Val Asp Ser Ser Leu Pro Thr Val Gly Val Phe Ala Lys Ala Thr  
 500 505 510  
 Ala Gln Asp Asn Pro Lys Ser Ala Thr Glu Gln Ser Gly Thr Gly Ile  
 515 520 525  
 Arg Ser Glu Ser Glu Thr Glu Ser Glu Ala Ser Glu Ile Thr Ile Pro  
 530 535 540  
 Pro Ser Thr Pro Ala Val Pro Gln Ala Pro Val Gln Gly Glu Asp Tyr  
 545 550 555 560  
 Gly Lys Gly Val Ile Phe Tyr Leu Arg Asp Lys Val Val Val Gly Ile  
 565 570 575  
 Val Leu Trp Asn Ile Phe Asn Arg Met Pro Ile Ala Arg Lys Ile Ile  
 580 585 590  
 Lys Asp Gly Glu Gln His Glu Asp Leu Asn Glu Val Ala Lys Leu Phe  
 595 600 605  
 Asn Ile His Glu Asp  
 610

<210> 11  
 <211> 1842  
 <212> DNA  
 <213> Homo sapiens

<400> 11  
 atgttccggt gtggaggcct ggcggcgggt gctttgaagc agaagctggt gcccttggtg 60  
 cggaccgtgt gcgtccgaag cccgaggcag aggaaccggc tcccaggcaa cttgttccag 120  
 cgatggcatg ttcctctaga actccagatg acaagacaaa tggctagctc tggtgcatca 180  
 gggggcaaaa tcgataattc tgtgttagtc cttattgtgg gcttatcaac agtaggagct 240  
 ggtgcctatg cctacaagac tatgaaagag gacgaaaaaa gatacaatga aagaatttca 300  
 gggttagggc tgacaccaga acagaaacag aaaaaggccg cgttatctgc ttcagaagga 360  
 gaggaagttc ctcaagacaa ggcgccaagt catgttcctt tcctgctaata tgggtggaggc 420  
 acagctgctt ttgctgcagc cagatccatc cgggctcggg atcctggggc caggggtactg 480  
 attgtatctg aagatcctga gctgccgtac atgcgacctc ctctttcaaa agaactgtgg 540  
 ttttcagatg acccaaagt cacaagaca ctgcgattca aacagtggaa tggaaaagag 600  
 agaagcatat atttccagcc accttctttc tatgtctctg ctccaggacct gcctcatatt 660  
 gagaatggtg gtgtggctgt cctcactggg aagaaggtag tacagctgga tgtgagagac 720  
 aacatggtga aacttaatga tggctctcaa ataacctatg aaaagtgtct gattgcaaca 780  
 ggagggtactc caagaagtct gtctgccatt gatagggctg gagcagaggt gaagagtaga 840  
 acaacgcttt tcagaaagat tggagacttt agaagcttgg agaagatttc acgggaagtc 900  
 aaatcaatta cgattatcgg tgggggcttc cttggtagcg aactggcctg tgctcttggc 960  
 agaaaggctc gagccttggg cacagaagtg attcaactct tccccgagaa aggaaatatg 1020  
 ggaaagatcc tccccgaata cctcagcaac tggaccatgg aaaaagtcag acgagagggg 1080  
 gttaagggtga tgcccaatgc tattgtgcaa tccgttgagg tcagcagtgg caagttactt 1140  
 atcaagctga aagacggcag gaaggtagaa actgaccaca tagtggcagc tgtgggcctg 1200  
 gagcccaatg ttgagttggc caagactggt ggcctggaaa tagactcaga ttttgggtggc 1260  
 ttccgggtaa atgcagagct acaagcacgc tctaactct gggtaggcagg agatgctgca 1320  
 tgcttctacg atataaagtt gggaaggagg cgggtagagc accatgatca cgctgttgtg 1380  
 agtggaagat tggctggaga aaatatgact ggagctgcta agccgtactg gcatcagtca 1440  
 atgttctgga gtgatttggg ccccgatgtt ggctatgaag ctattggtct tgtggacagt 1500  
 agtttgccca cagttggtgt ttttgcaaaa gcaactgcac aagacaacc caaatctgcc 1560  
 acagagcagt caggaactgg tatccgatca gagagtgaga cagagtccga ggcctcagaa 1620  
 attactattc ctcccagcac cccggcagtt ccacaggctc ccgtccaggg ggaggactac 1680

ggcaaagggtg tcattcttcta cctcagggac aaagtgggtcg tggggattgt gctatggaac 1740  
 atctttaacc gaatgccaat agcaaggaag atcattaagg acggtgagca gcatgaagat 1800  
 ctcaatgaag tagccaaaact attcaacatt catgaagact ga 1842

<210> 12  
 <211> 186  
 <212> PRT  
 <213> Homo sapiens

<400> 12

Met Lys Ser Asp Phe Tyr Phe Gln Lys Ser Glu Pro His Ser Leu Ser  
 1 5 10 15

Ser Glu Ala Leu Met Arg Arg Ala Val Ser Leu Val Thr Asp Ser Thr  
 20 25 30

Ser Thr Phe Leu Ser Gln Thr Thr Tyr Ala Leu Ile Glu Ala Ile Thr  
 35 40 45

Glu Tyr Thr Lys Ala Val Tyr Thr Leu Thr Ser Leu Tyr Arg Gln Tyr  
 50 55 60

Thr Ser Leu Leu Gly Lys Met Asn Ser Glu Glu Glu Asp Glu Val Trp  
 65 70 75 80

Gln Val Ile Ile Gly Ala Arg Ala Glu Met Thr Ser Lys His Gln Glu  
 85 90 95

Tyr Leu Lys Leu Glu Thr Thr Trp Met Thr Ala Val Gly Leu Ser Glu  
 100 105 110

Met Ala Ala Glu Ala Ala Tyr Gln Thr Gly Ala Asp Gln Ala Ser Ile  
 115 120 125

Thr Ala Arg Asn His Ile Gln Leu Val Lys Leu Gln Val Glu Glu Val  
 130 135 140

His Gln Leu Ser Arg Lys Ala Glu Thr Lys Leu Ala Glu Ala Gln Ile  
 145 150 155 160

Glu Glu Leu Arg Gln Lys Thr Gln Glu Glu Gly Glu Glu Arg Ala Glu  
 165 170 175

Ser Glu Gln Glu Ala Tyr Leu Arg Glu Asp  
 180 185

<210> 13  
 <211> 561  
 <212> DNA  
 <213> Homo sapiens

<400> 13  
 atgaaatctg acttctactt ccagaaatca gagcctcatt cccttagtag tgaagcattg 60  
 atgaggagag cagtgtcttt ggtaacagat agcacctcta cctttctctc tcagaccaca 120  
 tatgcggttga ttgaagctat tactgaatat actaaggctg tttatacctt aacttctctt 180  
 taccgacaat atacaagttt acttgggaaa atgaattcag aggaggaaga tgaagtgtgg 240  
 caggtgatca taggagccag agctgagatg acttcaaaac accaagagta cttgaagctg 300  
 gaaaccactt ggatgactgc agttggtctt tcagagatgg cagcagaagc tgcatatcaa 360  
 actggcgcag atcaggcctc tataaccgcc aggaatcaca ttcagctggt gaaactgcag 420  
 gtggaagagg tgcaccagct ctcccggaaa gcagaaacca agctggcaga agcacagata 480  
 gaagagctcc gtcagaaaac acaggaggaa ggggaggagc gggctgagtc ggagcaggag 540  
 gcctacctgc gtgaggattg a 561

<210> 14  
 <211> 782  
 <212> PRT  
 <213> Homo sapiens

<400> 14

Met Ala Pro His Arg Pro Ala Pro Ala Leu Leu Cys Ala Leu Ser Leu  
 1 5 10 15

Ala Leu Cys Ala Leu Ser Leu Pro Val Arg Ala Ala Thr Ala Ser Arg  
 20 25 30

Gly Ala Ser Gln Ala Gly Ala Pro Gln Gly Arg Val Pro Glu Ala Arg  
 35 40 45

Pro Asn Ser Met Val Val Glu His Pro Glu Phe Leu Lys Ala Gly Lys  
 50 55 60

Glu Pro Gly Leu Gln Ile Trp Arg Val Glu Lys Phe Asp Leu Val Pro  
 65 70 75 80

Val Pro Thr Asn Leu Tyr Gly Asp Phe Phe Thr Gly Asp Ala Tyr Val  
 85 90 95

Ile Leu Lys Thr Val Gln Leu Arg Asn Gly Asn Leu Gln Tyr Asp Leu  
 100 105 110

His Tyr Trp Leu Gly Asn Glu Cys Ser Gln Asp Glu Ser Gly Ala Ala  
 115 120 125

Ala Ile Phe Thr Val Gln Leu Asp Asp Tyr Leu Asn Gly Arg Ala Val  
 130 135 140

Gln His Arg Glu Val Gln Gly Phe Glu Ser Ala Thr Phe Leu Gly Tyr  
 145 150 155 160

Phe Lys Ser Gly Leu Lys Tyr Lys Lys Gly Gly Val Ala Ser Gly Phe  
 165 170 175

Lys His Val Val Pro Asn Glu Val Val Val Gln Arg Leu Phe Gln Val  
 180 185 190

Lys Gly Arg Arg Val Val Arg Ala Thr Glu Val Pro Val Ser Trp Glu  
 195 200 205

Ser Phe Asn Asn Gly Asp Cys Phe Ile Leu Asp Leu Gly Asn Asn Ile  
 210 215 220

His Gln Trp Cys Gly Ser Asn Ser Asn Arg Tyr Glu Arg Leu Lys Ala  
 225 230 235 240

Thr Gln Val Ser Lys Gly Ile Arg Asp Asn Glu Arg Ser Gly Arg Ala  
 245 250 255

Arg Val His Val Ser Glu Glu Gly Thr Glu Pro Glu Ala Met Leu Gln  
 260 265 270

Val Leu Gly Pro Lys Pro Ala Leu Pro Ala Gly Thr Glu Asp Thr Ala  
 275 280 285

Lys Glu Asp Ala Ala Asn Arg Lys Leu Ala Lys Leu Tyr Lys Val Ser  
 290 295 300

Asn Gly Ala Gly Thr Met Ser Val Ser Leu Val Ala Asp Glu Asn Pro  
 305 310 315 320

Phe Ala Gln Gly Ala Leu Lys Ser Glu Asp Cys Phe Ile Leu Asp His  
 325 330 335

Gly Lys Asp Gly Lys Ile Phe Val Trp Lys Gly Lys Gln Ala Asn Thr  
 340 345 350

Glu Glu Arg Lys Ala Ala Leu Lys Thr Ala Ser Asp Phe Ile Thr Lys  
 355 360 365

Met Asp Tyr Pro Lys Gln Thr Gln Val Ser Val Leu Pro Glu Gly Gly  
 370 375 380

Glu Thr Pro Leu Phe Lys Gln Phe Phe Lys Asn Trp Arg Asp Pro Asp  
 385 390 395 400

Gln Thr Asp Gly Leu Gly Leu Ser Tyr Leu Ser Ser His Ile Ala Asn  
 405 410 415

Val Glu Arg Val Pro Phe Asp Ala Ala Thr Leu His Thr Ser Thr Ala  
 420 425 430

Met Ala Ala Gln His Gly Met Asp Asp Asp Gly Thr Gly Gln Lys Gln  
 435 440 445

Ile Trp Arg Ile Glu Gly Ser Asn Lys Val Pro Val Asp Pro Ala Thr  
 450 455 460

Tyr Gly Gln Phe Tyr Gly Gly Asp Ser Tyr Ile Ile Leu Tyr Asn Tyr  
 465 470 475 480

Arg His Gly Gly Arg Gln Gly Gln Ile Ile Tyr Asn Trp Gln Gly Ala  
 485 490 495

Gln Ser Thr Gln Asp Glu Val Ala Ala Ser Ala Ile Leu Thr Ala Gln  
 500 505 510

Leu Asp Glu Glu Leu Gly Gly Thr Pro Val Gln Ser Arg Val Val Gln  
 515 520 525

Gly Lys Glu Pro Ala His Leu Met Ser Leu Phe Gly Gly Lys Pro Met  
 530 535 540

Ile Ile Tyr Lys Gly Gly Thr Ser Arg Glu Gly Gly Gln Thr Ala Pro  
 545 550 555 560

Ala Ser Thr Arg Leu Phe Gln Val Arg Ala Asn Ser Ala Gly Ala Thr  
 565 570 575

Arg Ala Val Glu Val Leu Pro Lys Ala Gly Ala Leu Asn Ser Asn Asp  
 580 585 590

Ala Phe Val Leu Lys Thr Pro Ser Ala Ala Tyr Leu Trp Val Gly Thr  
 595 600 605



Gly Ala Ser Glu Ala Glu Lys Thr Gly Ala Gln Glu Leu Leu Arg Val  
610 615 620

Leu Arg Ala Gln Pro Val Gln Val Ala Glu Gly Ser Glu Pro Asp Gly  
625 630 635 640

Phe Trp Glu Ala Leu Gly Gly Lys Ala Ala Tyr Arg Thr Ser Pro Arg  
645 650 655

Leu Lys Asp Lys Lys Met Asp Ala His Pro Pro Arg Leu Phe Ala Cys  
660 665 670

Ser Asn Lys Ile Gly Arg Phe Val Ile Glu Glu Val Pro Gly Glu Leu  
675 680 685

Met Gln Glu Asp Leu Ala Thr Asp Asp Val Met Leu Leu Asp Thr Trp  
690 695 700

Asp Gln Val Phe Val Trp Val Gly Lys Asp Ser Gln Glu Glu Glu Lys  
705 710 715 720

Thr Glu Ala Leu Thr Ser Ala Lys Arg Tyr Ile Glu Thr Asp Pro Ala  
725 730 735

Asn Arg Asp Arg Arg Thr Pro Ile Thr Val Val Lys Gln Gly Phe Glu  
740 745 750

Pro Pro Ser Phe Val Gly Trp Phe Leu Gly Trp Asp Asp Asp Tyr Trp  
755 760 765

Ser Val Asp Pro Leu Asp Arg Ala Met Ala Glu Leu Ala Ala  
770 775 780

<210> 15  
<211> 2349  
<212> DNA  
<213> Homo sapiens

<400> 15  
atggctccgc accgccccgc gcccgcgctg ctttgcgcgc tgtccctggc gctgtgcgcg 60  
ctgtcgctgc ccgtccgcgc ggccactgcg tcgcgggggg cgtcccaggc gggggcgccc 120  
caggggcggg tgcccgaggc gcggcccaac agcatggtgg tggaacaccc cgagttcctc 180  
aaggcagggg aggagcctgg cctgcagatc tggcgtgtgg agaagttcga tctggtgccc 240  
gtgcccacca acctttatgg agacttcttc acgggcgacg cctacgtcat cctgaagaca 300  
gtgcagctga ggaacggaaa tctgcagtat gacctccact actggctggg caatgagtgc 360

agccaggatg agagcggggc ggccgccatc tttaccgtgc agctggatga ctacctgaac	420
ggccggggccg tgcagcacccg tgagggtccag ggcttcgagt cggccacctt cctagggtac	480
ttcaagtctg gcctgaagta caagaaagga ggtgtggcat caggattcaa gcacgtggta	540
cccaacgagg tgggtggtgca gagactcttc cagggtcaaag ggcggcgtgt ggtccgtgcc	600
accgagggtac ctgtgtcctg ggagagcttc aacaatggcg actgcttcac cctggacctg	660
ggcaacaaca tccaccagtg gtgtgggttcc aacagcaatc ggtatgaaag actgaaggcc	720
acacagggtgt ccaagggcat ccgggacaac gagcggagtg gccggggccg agtgcacgtg	780
tctgaggagg gcactgagcc cgaggcgatg ctccagggtgc tgggccccaa gccggctctg	840
cctgcaggta ccgaggacac cgccaaggag gatgcggcca accgcaagct ggccaagctc	900
tacaagggtct ccaatggtgc agggaccatg tccgtctccc tcgtggctga tgagaacccc	960
ttcgcccagg gggccctgaa gtcagaggac tgcttcaccc tggaccacgg caaagatggg	1020
aaaatctttg tctggaaagg caagcaggca aacacggagg agaggaaggc tgccctcaaa	1080
acagcctctg acttcacac caagatggac taccccaagc agactcaggt ctcggtcctt	1140
cctgagggcg gtgagacccc actgttcaag cagttcttca agaactggcg ggacccagac	1200
cagacagatg gcctgggctt gtcctacctt tccagccata tcgccaacgt ggagcgggtg	1260
cccttcgacg ccgccaccct gcacacctcc actgccatgg ccgccagca cggcatggat	1320
gacgatggca caggccagaa acagatctgg agaatcgaag gttccaacaa ggtgcccgtg	1380
gaccctgcca catatggaca gttctatgga ggcgacagct acatcattct gtacaactac	1440
cgccatggtg gccgccaggg gcagataatc tataactggc aggggtgcca gtctaccag	1500
gatgaggtcg ctgcatctgc catcctgact gctcagctgg atgaggagct gggaggtagc	1560
cctgtccaga gccgtgtggt ccaaggcaag gagcccggc acctcatgag cctgtttggt	1620
gggaagccca tgatcatcta caagggcggc acctcccgcg agggcgggca gacagcccct	1680
gccagcaccg gcctcttcca ggtccgcgcc aacagcgctg gagccacccg ggctgttgag	1740
gtattgccta aggctggtgc actgaactcc aacgatgcct ttgttctgaa aaccccctca	1800
gccgcctacc tgtgggtggg tacaggagcc agcgaggcag agaagacggg ggcccaggag	1860
ctgctcaggg tgctgcgggc ccaacctgtg cagggtggcag aaggcagcga gccagatggc	1920
ttctgggagg ccctgggcgg gaaggctgcc taccgcacat cccacggct gaaggacaag	1980
aagatggatg cccatcctcc tcgcctcttt gcctgtcca acaagattgg acgttttgtg	2040
atcgaagagg ttctgtgga gctcatgcag gaagacctgg caacggatga cgcatgctt	2100
ctggacacct gggaccaggc ctttgtctgg gttggaaagg attctcaaga agaagaaaag	2160
acagaagcct tgacttctgc taagcggtag atcgagacgg acccagccaa tcgggatcgg	2220

eggacgcca tcaccgtggt gaagcaaggc tttgagcctc cctcctttgt gggctgggtc 2280  
 cttggctggg atgatgatta ctggtctgtg gaccccttgg acagggccat ggctgagctg 2340  
 gctgcctga 2349

<210> 16  
 <211> 239  
 <212> PRT  
 <213> Homo sapiens  
 <400> 16

Met Ala His Ala Gly Arg Thr Gly Tyr Asp Asn Arg Glu Ile Val Met  
 1 5 10 15

Lys Tyr Ile His Tyr Lys Leu Ser Gln Arg Gly Tyr Glu Trp Asp Ala  
 20 25 30

Gly Asp Val Gly Ala Ala Pro Pro Gly Ala Ala Pro Ala Pro Gly Ile  
 35 40 45

Phe Ser Ser Gln Pro Gly His Thr Pro His Thr Ala Ala Ser Arg Asp  
 50 55 60

Pro Val Ala Arg Thr Ser Pro Leu Gln Thr Pro Ala Ala Pro Gly Ala  
 65 70 75 80

Ala Ala Gly Pro Ala Leu Ser Pro Val Pro Pro Val Val His Leu Thr  
 85 90 95

Leu Arg Gln Ala Gly Asp Asp Phe Ser Arg Arg Tyr Arg Arg Asp Phe  
 100 105 110

Ala Glu Met Ser Arg Gln Leu His Leu Thr Pro Phe Thr Ala Arg Gly  
 115 120 125

Arg Phe Ala Thr Val Val Glu Glu Leu Phe Arg Asp Gly Val Asn Trp  
 130 135 140

Gly Arg Ile Val Ala Phe Phe Glu Phe Gly Gly Val Met Cys Val Glu  
 145 150 155 160

Ser Val Asn Arg Glu Met Ser Pro Leu Val Asp Asn Ile Ala Leu Trp  
 165 170 175

Met Thr Glu Tyr Leu Asn Arg His Leu His Thr Trp Ile Gln Asp Asn  
 180 185 190

Gly Gly Trp Asp Ala Phe Val Glu Leu Tyr Gly Pro Ser Met Arg Pro  
 195 200 205

Leu Phe Asp Phe Ser Trp Leu Ser Leu Lys Thr Leu Leu Ser Leu Ala  
 210 215 220

Leu Val Gly Ala Cys Ile Thr Leu Gly Ala Tyr Leu Gly His Lys  
 225 230 235

<210> 17  
 <211> 720  
 <212> DNA  
 <213> Homo sapiens

<400> 17  
 atggcgacg ctgggagaac agggtagcat aaccgggaga tagtgatgaa gtacatccat 60  
 tataagctgt cgcagagggg ctacgagtgg gatgcgggag atgtgggagc cgcgcccccg 120  
 ggggcccggc ccgcgccggg catcttctcc tcgcagcccc ggcacacgcc ccatacagcc 180  
 gcatcccggg acccggtcgc caggacctcg ccgctgcaga ccccggtcgc ccccgggcgc 240  
 gccgcggggc ctgcgctcag cccggtgcca cctgtggtcc acctgaccct ccgccaggcc 300  
 ggcgacgact tctcccgcgc ctaccgccgc gacttcgccg agatgtccag gcagctgcac 360  
 ctgacgccct tcaccgcgcg gggacgcttt gccacgggtg tggaggagct cttcagggac 420  
 ggggtgaact gggggaggat tgtggccttc tttgagttcg gtgggggtcat gtgtgtggag 480  
 agcgtcaacc gggagatgtc gcccctggtg gacaacatcg ccctgtggat gactgagtac 540  
 ctgaaccggc acctgcacac ctggatccag gataacggag gctgggatgc ctttgtggaa 600  
 ctgtacggcc ccagcatgcg gcctctgttt gatttctcct ggctgtctct gaagactctg 660  
 ctcagtttgg ccctggtggg agcttgcac accctgggtg cctatctggg ccacaagtga 720

<210> 18  
 <211> 164  
 <212> PRT  
 <213> Homo sapiens

<400> 18

Met Asp Gly Ser Gly Glu Gln Pro Arg Gly Gly Gly Pro Thr Ser Ser  
 1 5 10 15

Glu Gln Ile Met Lys Thr Gly Ala Leu Leu Leu Gln Gly Phe Ile Gln  
 20 25 30

Asp Arg Ala Gly Arg Met Gly Gly Glu Ala Pro Glu Leu Ala Leu Asp  
 35 40 45

Pro Val Pro Gln Asp Ala Ser Thr Lys Lys Leu Ser Glu Cys Leu Lys  
50 55 60

Arg Ile Gly Asp Glu Leu Asp Ser Asn Met Glu Leu Gln Arg Met Ile  
65 70 75 80

Ala Ala Val Asp Thr Asp Ser Pro Arg Glu Val Phe Phe Arg Val Ala  
85 90 95

Ala Asp Met Phe Ser Asp Gly Asn Phe Asn Trp Gly Arg Val Val Ala  
100 105 110

Leu Phe Tyr Phe Ala Ser Lys Leu Val Leu Lys Ala Gly Val Lys Trp  
115 120 125

Arg Asp Leu Gly Ser Leu Gln Pro Leu Pro Pro Gly Phe Lys Arg Phe  
130 135 140

Thr Cys Leu Ser Ile Pro Arg Ser Trp Asp Tyr Arg Pro Cys Ala Pro  
145 150 155 160

Arg Cys Arg Asn

<210> 19

<211> 495

<212> DNA

<213> Homo sapiens

<400> 19

atggacgggt cccgggagca gcccagaggc gggggggcca ccagctctga gcagatcatg	60
aagacagggg cccttttgct tcagggtttc atccaggatc gagcagggcg aatggggggg	120
gaggcaccgc agctggccct ggaccgggtg cctcaggatg cgtccaccaa gaagctgagc	180
gagtgtctca agcgcacgcg ggacgaactg gacagtaaca tggagctgca gaggatgatt	240
gccgccgtgg acacagactc ccccgagag gtctttttcc gaggggcagc tgacatgttt	300
tctgacggca acttcaactg gggccgggtt gtcgcccttt tctactttgc cagcaaactg	360
gtgctcaagg ctggcgtaga atggcgatgat ctgggctcac tgcaacctct gcctcctggg	420
ttcaagcgat tcacctgcct cagcatccca aggagctggg attacaggcc ctgtgcacca	480
aggtgccgga actga	495

<210> 20  
 <211> 168  
 <212> PRT  
 <213> Homo sapiens

<400> 20

Met Phe Gln Ile Pro Glu Phe Glu Pro Ser Glu Gln Glu Asp Ser Ser  
 1 5 10 15

Ser Ala Glu Arg Gly Leu Gly Pro Ser Pro Ala Gly Asp Gly Pro Ser  
 20 25 30

Gly Ser Gly Lys His His Arg Gln Ala Pro Gly Leu Leu Trp Asp Ala  
 35 40 45

Ser His Gln Gln Glu Gln Pro Thr Ser Ser Ser His His Gly Gly Ala  
 50 55 60

Gly Ala Val Glu Ile Arg Ser Arg His Ser Ser Tyr Pro Ala Gly Thr  
 65 70 75 80

Glu Asp Asp Glu Gly Met Gly Glu Glu Pro Ser Pro Phe Arg Gly Arg  
 85 90 95

Ser Arg Ser Ala Pro Pro Asn Leu Trp Ala Ala Gln Arg Tyr Gly Arg  
 100 105 110

Glu Leu Arg Arg Met Ser Asp Glu Phe Val Asp Ser Phe Lys Lys Gly  
 115 120 125

Leu Pro Arg Pro Lys Ser Ala Gly Thr Ala Thr Gln Met Arg Gln Ser  
 130 135 140

Ser Ser Trp Thr Arg Val Phe Gln Ser Trp Trp Asp Arg Asn Leu Gly  
 145 150 155 160

Arg Gly Ser Ser Ala Pro Ser Gln  
 165

<210> 21  
 <211> 507  
 <212> DNA  
 <213> Homo sapiens

<400> 21

atgttccaga tcccagagtt tgagccgagt gagcaggaag actccagctc tgcagagagg 60

ggcctggggc ccagccccgc aggggacggg ccctcaggct ccggcaagca tcatcgccag 120

gccccaggcc tcctgtggga cgccagtcac cagcaggagc agccaaccag cagcagccat 180

catggaggcg ctggggctgt ggagatccgg agtcgccaca gctcctaccc cgcgggggacg 240  
gaggacgacg aagggatggg ggaggagccc agcccccttc ggggccgctc gcgctcggcg 300  
cccccaacc tctgggcagc acagcgctat ggccgcgagc tccggaggat gagtgcgag 360  
tttgtggact cctttaagaa gggacttcct cgcccgaaga gcgcgggcac agcaacgcag 420  
atgcggcaaaa gctccagctg gacgcgagtc ttccagtcct ggtgggatcg gaacttgggc 480  
aggggaagct ccgccccctc ccagtga 507

<210> 22  
<211> 241  
<212> PRT  
<213> Homo sapiens

<400> 22

Met Cys Ser Gly Ala Gly Val Met Met Ala Arg Trp Ala Ala Arg Gly  
1 5 10 15

Arg Ala Gly Trp Arg Ser Thr Val Arg Ile Leu Ser Pro Leu Gly His  
20 25 30

Cys Glu Pro Gly Val Ser Arg Ser Cys Arg Ala Ala Gln Ala Met Asp  
35 40 45

Cys Glu Val Asn Asn Gly Ser Ser Leu Arg Asp Glu Cys Ile Thr Asn  
50 55 60

Leu Leu Val Phe Gly Phe Leu Gln Ser Cys Ser Asp Asn Ser Phe Arg  
65 70 75 80

Arg Glu Leu Asp Ala Leu Gly His Glu Leu Pro Val Leu Ala Pro Gln  
85 90 95

Trp Glu Gly Tyr Asp Glu Leu Gln Thr Asp Gly Asn Arg Ser Ser His  
100 105 110

Ser Arg Leu Gly Arg Ile Glu Ala Asp Ser Glu Ser Gln Glu Asp Ile  
115 120 125

Ile Arg Asn Ile Ala Arg His Leu Ala Gln Val Gly Asp Ser Met Asp  
130 135 140

Arg Ser Ile Pro Pro Gly Leu Val Asn Gly Leu Ala Leu Gln Leu Arg  
145 150 155 160

Asn Thr Ser Arg Ser Glu Glu Asp Arg Asn Arg Asp Leu Ala Thr Ala  
165 170 175

Leu Glu Gln Leu Leu Gln Ala Tyr Pro Arg Asp Met Glu Lys Glu Lys  
180 185 190

Thr Met Leu Val Leu Ala Leu Leu Leu Ala Lys Lys Val Ala Ser His  
195 200 205

Thr Pro Ser Leu Leu Arg Asp Val Phe His Thr Thr Val Asn Phe Ile  
210 215 220

Asn Gln Asn Leu Arg Thr Tyr Val Arg Ser Leu Ala Arg Asn Gly Met  
225 230 235 240

Asp

<210> 23  
<211> 726  
<212> DNA  
<213> Homo sapiens

<400> 23  
atgtgcagcg gtgctggggt catgatggct cggtgggcag cgaggggccg ggccggctgg 60  
aggagcacag tgcggattct gtcgccactg ggacactgtg aaccaggagt gagtccgagc 120  
tgccgcgctg cccaggccat ggactgtgag gtcaacaacg gttccagcct cagggatgag 180  
tgcatacaaa acctactggt gtttggttc ctccaaagct gttctgacaa cagcttccgc 240  
agagagctgg acgcactggg ccacgagctg ccagtgtgtg ctcccagtg ggagggctac 300  
gatgagctgc agactgatgg caaccgcagc agccactccc gcttgggaag aatagaggca 360  
gattctgaaa gtcaagaaga catcatccgg aatattgcca ggcacctcgc ccaggtcggg 420  
gacagcatgg accgtagcat ccctccgggc ctggtgaacg gcctggccct gcagctcagg 480  
aacaccagcc ggtcggagga ggaccggaac agggacctgg cactgcccct ggagcagctg 540  
ctgcaggcct accctagaga catggagaag gagaagacca tgctgggtgct ggccctgctg 600  
ctggccaaga aggtggccag tcacacgccg tccttgctcc gtgatgtctt tcacacaaca 660  
gtgaatttta ttaaccagaa cctacgcacc tacgtgagga gcttagccag aaatgggatg 720  
gactga 726



<210> 24  
 <211> 297  
 <212> PRT  
 <213> Homo sapiens

<400> 24

Met Arg Ala Leu Arg Ala Gly Leu Thr Leu Ala Ser Gly Ala Gly Leu  
 1 5 10 15

Gly Ala Val Val Glu Gly Trp Arg Arg Arg Arg Glu Asp Ala Arg Ala  
 20 25 30

Ala Leu Gly Leu Leu Gly Arg Leu Pro Val Leu Pro Val Ala Ala Ala  
 35 40 45

Ala Glu Leu Pro Pro Val Pro Gly Gly Pro Arg Gly Pro Gly Glu Leu  
 50 55 60

Ala Lys Tyr Gly Leu Pro Gly Leu Ala Gln Leu Lys Ser Arg Glu Ser  
 65 70 75 80

Tyr Val Leu Cys Tyr Asp Pro Arg Thr Arg Gly Ala Leu Trp Val Val  
 85 90 95

Glu Gln Leu Arg Pro Glu Arg Leu Arg Gly Asp Gly Asp Arg Arg Glu  
 100 105 110

Cys Asp Phe Arg Glu Asp Asp Ser Val His Ala Tyr His Arg Ala Thr  
 115 120 125

Asn Ala Asp Tyr Arg Gly Ser Gly Phe Asp Arg Gly His Leu Ala Ala  
 130 135 140

Ala Ala Asn His Arg Trp Ser Gln Lys Ala Met Asp Asp Thr Phe Tyr  
 145 150 155 160

Leu Ser Lys Val Ala Pro Gln Val Pro His Leu Asn Gln Asn Ala Trp  
 165 170 175

Asn Asn Leu Glu Lys Tyr Ser Arg Ser Leu Thr Arg Ser Tyr Gln Asn  
 180 185 190

Val Tyr Val Cys Thr Gly Pro Leu Phe Leu Pro Arg Thr Glu Ala Asp  
 195 200 205

Gly Lys Ser Tyr Val Lys Tyr Gln Val Ile Gly Lys Asn His Val Ala  
 210 215 220

Val Pro Thr His Phe Phe Lys Val Leu Ile Leu Glu Ala Ala Gly Gly  
 225 230 235 240

Gln Ile Glu Leu Arg Thr Tyr Val Met Pro Asn Ala Pro Val Asp Glu  
 245 250 255

Ala Ile Pro Leu Glu Arg Phe Leu Val Pro Ile Glu Ser Ile Glu Arg  
 260 265 270

Ala Ser Gly Leu Leu Phe Val Pro Asn Ile Leu Ala Arg Ala Gly Ser  
 275 280 285

Leu Lys Ala Ile Thr Ala Gly Ser Lys  
 290 295

<210> 25  
 <211> 894  
 <212> DNA  
 <213> Homo sapiens

<400> 25  
 atgcggggcgc tgcggggccgg cctgaccctg gcgtcggggcg cgggggctggg tgcggtcgctc 60  
 gaggggctggc ggcgggcggcg ggaggacgcg cgggcgggcgc tgggactgct gggccggctg 120  
 cccgtgctgc ccgtggcggc ggcagccgag ttgccccctg tgcccggggg accccgcggc 180  
 ccgggcgagt tggccaagta cgggctgccg gggctggcgcg agctcaagag ccgcgagtcg 240  
 tacgtgctgt gctacgaccc gcgcacccgc ggcgcgctct gggtggtgga gcagctgcga 300  
 cccgagcgtc tccgcggcga cggcgaccgg cgcgagtgcg acttccgcga ggacgactcg 360  
 gtgcacgcgt accaccgtgc caccaacgcc gactaccgcg gcagtggctt cgaccgcggt 420  
 cacctggccg ccgccgcca ccaccgctgg agccagaagg ccatggacga cacgttctac 480  
 ctgagcaaag tcgcgcccc ggtgccccac ctcaaccaga atgcctggaa caacctggag 540  
 aaatatagcc gcagcttgac ccgcagctac caaaacgtct atgtctgcac agggccactc 600  
 ttcttgcgca ggacagaggc tgatgggaaa tcctacgtaa agtaccaggc catcggcaag 660  
 aaccacgtgg cagtggccac acactttctt aaggctgctga tcctggaggc agcaggtggg 720  
 caaattgagc tccgcaccta cgtgatgccc aacgcacctg tggatgaggc catcccactg 780  
 gagcgcttcc tgggtgcccac cgagagcatt gagcgggctt cgggggctgct ctttgtgcca 840  
 aacatcctgg cgcggggcagg cagcctcaag gccatcacgg cgggcagtaa gtga 894

<210> 26  
 <211> 338  
 <212> PRT  
 <213> Homo sapiens

<400> 26

Met Leu Gln Lys Pro Lys Ser Val Lys Leu Arg Ala Leu Arg Ser Pro  
 1 5 10 15

Arg Lys Phe Gly Val Ala Gly Arg Ser Cys Gln Glu Val Leu Arg Lys  
 20 25 30

Gly Cys Leu Arg Phe Gln Leu Pro Glu Arg Gly Ser Arg Leu Cys Leu  
 35 40 45

Tyr Glu Asp Gly Thr Glu Leu Thr Glu Asp Tyr Phe Pro Ser Val Pro  
 50 55 60

Asp Asn Ala Glu Leu Val Leu Leu Thr Leu Gly Gln Ala Trp Gln Gly  
 65 70 75 80

Tyr Val Ser Asp Ile Arg Arg Phe Leu Ser Ala Phe His Glu Pro Gln  
 85 90 95

Val Gly Leu Ile Gln Ala Ala Gln Gln Leu Leu Cys Asp Glu Gln Ala  
 100 105 110

Pro Gln Arg Gln Arg Leu Leu Ala Asp Leu Leu His Asn Val Ser Gln  
 115 120 125

Asn Ile Ala Ala Glu Thr Arg Ala Glu Asp Pro Pro Trp Phe Glu Gly  
 130 135 140

Leu Glu Ser Arg Phe Gln Ser Lys Ser Gly Tyr Leu Arg Tyr Ser Cys  
 145 150 155 160

Glu Ser Arg Ile Arg Ser Tyr Leu Arg Glu Val Ser Ser Tyr Pro Ser  
 165 170 175

Thr Val Gly Ala Glu Ala Gln Glu Glu Phe Leu Arg Val Leu Gly Ser  
 180 185 190

Met Cys Gln Arg Leu Arg Ser Met Gln Tyr Asn Gly Ser Tyr Phe Asp  
 195 200 205

Arg Gly Ala Lys Gly Gly Ser Arg Leu Cys Thr Pro Glu Gly Trp Phe  
 210 215 220

Ser Cys Gln Gly Pro Phe Asp Met Asp Ser Cys Leu Ser Arg His Ser  
 225 230 235 240

Ile Asn Pro Tyr Ser Asn Arg Glu Ser Arg Ile Leu Phe Ser Thr Trp  
 245 250 255

Asn Leu Asp His Ile Ile Glu Lys Lys Arg Thr Ile Ile Pro Thr Leu  
 260 265 270

Val Glu Ala Ile Lys Glu Gln Asp Gly Arg Glu Val Asp Trp Glu Tyr  
 275 280 285

Phe Tyr Gly Leu Leu Phe Thr Ser Glu Asn Leu Lys Leu Val His Ile  
 290 295 300

Val Cys His Lys Lys Thr Thr His Lys Leu Asn Cys Asp Pro Ser Arg  
 305 310 315 320

Ile Tyr Lys Pro Gln Thr Arg Leu Lys Arg Lys Gln Pro Val Arg Lys  
 325 330 335

Arg Gln

<210> 27  
 <211> 1017  
 <212> DNA  
 <213> Homo sapiens

<400> 27  
 atgctccaga agcccaagag cgtgaagctg cgggccctgc gcagcccgag gaagttcggc 60  
 gtggctggcc ggagctgcca ggaggtgctg cgcaagggct gtctccgctt ccagctccct 120  
 gagegcgggtt cccggctgtg cctgtacgag gatggcacgg agctgacgga agattacttc 180  
 cccagtgttc ccgacaacgc cgagctgggtg ctgctcacct tgggccaggc ctggcagggc 240  
 tatgtgagcg acatcaggcg ctctctcagt gcatttcacg agccacaggt ggggctcatc 300  
 caggccgccc agcagctgct gtgtgatgag caggccccac agaggcagag gctgctggct 360  
 gacctcctgc acaacgtcag ccagaacatc gcggccgaga cccgggctga ggacccgccg 420  
 tggtttgaag gcttggagtc ccgatttcag agcaagtctg gctatctgag atacagctgt 480  
 gagagccgga tccggagtta cctgagggag gtgagctcct acccctccac ggtgggtgcg 540  
 gaggtcagg aggaattcct gcgggtcctc ggctccatgt gccagaggct ccggtccatg 600  
 cagtacaatg gcagctactt cgacagagga gccaagggcg gcagccgcct ctgcacaccg 660  
 gaaggctggg tctcctgccg gggtcctttt gacatggaca gctgcttatc aagacactcc 720

atcaaccct acagtaacag ggagagcagg atcctcttca gcacctggaa cctggatcac 780  
 ataatagaaa agaaacgcac catcattcct acactggtgg aagcaattaa ggaacaagat 840  
 ggaagagaag tggactggga gtatttttat ggctgcttt ttacctcaga gaacctaaaa 900  
 ctagtgcaca ttgtctgcca taagaaaacc acccacaagc tcaactgtga cccaagcaga 960  
 atctacaaac cccagacaag gttgaagcgg aagcagcctg tgcggaaacg ccagtga 1017

<210> 28  
 <211> 331  
 <212> PRT  
 <213> Homo sapiens

<400> 28

Met Glu Val Thr Gly Asp Ala Gly Val Pro Glu Ser Gly Glu Ile Arg  
 1 5 10 15

Thr Leu Lys Pro Cys Leu Leu Arg Arg Asn Tyr Ser Arg Glu Gln His  
 20 25 30

Gly Val Ala Ala Ser Cys Leu Glu Asp Leu Arg Ser Lys Ala Cys Asp  
 35 40 45

Ile Leu Ala Ile Asp Lys Ser Leu Thr Pro Val Thr Leu Val Leu Ala  
 50 55 60

Glu Asp Gly Thr Ile Val Asp Asp Asp Asp Tyr Phe Leu Cys Leu Pro  
 65 70 75 80

Ser Asn Thr Lys Phe Val Ala Leu Ala Ser Asn Glu Lys Trp Ala Tyr  
 85 90 95

Asn Asn Ser Asp Gly Gly Thr Ala Trp Ile Ser Gln Glu Ser Phe Asp  
 100 105 110

Val Asp Glu Thr Asp Ser Gly Ala Gly Leu Lys Trp Lys Asn Val Ala  
 115 120 125

Arg Gln Leu Lys Glu Asp Leu Ser Ser Ile Ile Leu Leu Ser Glu Glu  
 130 135 140

Asp Leu Gln Met Leu Val Asp Ala Pro Cys Ser Asp Leu Ala Gln Glu  
 145 150 155 160

Leu Arg Gln Ser Cys Ala Thr Val Gln Arg Leu Gln His Thr Leu Gln  
 165 170 175

Gln Val Leu Asp Gln Arg Glu Glu Val Arg Gln Ser Lys Gln Leu Leu  
180 185 190

Gln Leu Tyr Leu Gln Ala Leu Glu Lys Glu Gly Ser Leu Leu Ser Lys  
195 200 205

Gln Glu Glu Ser Lys Ala Ala Phe Gly Glu Glu Val Asp Ala Val Asp  
210 215 220

Thr Gly Ile Ser Arg Glu Thr Ser Ser Asp Val Ala Leu Ala Ser His  
225 230 235 240

Ile Leu Thr Ala Leu Arg Glu Lys Gln Ala Pro Glu Leu Ser Leu Ser  
245 250 255

Ser Gln Asp Leu Glu Leu Val Thr Lys Glu Asp Pro Lys Ala Leu Ala  
260 265 270

Val Ala Leu Asn Trp Asp Ile Lys Lys Thr Glu Thr Val Gln Glu Ala  
275 280 285

Cys Glu Arg Glu Leu Ala Leu Arg Leu Gln Gln Thr Gln Ser Leu His  
290 295 300

Ser Leu Arg Ser Ile Ser Ala Ser Lys Ala Ser Pro Pro Gly Asp Leu  
305 310 315 320

Gln Asn Pro Lys Arg Ala Arg Gln Asp Pro Thr  
325 330

<210> 29

<211> 996

<212> DNA

<213> Homo sapiens

<400> 29

atggaggtga ccggggacgc cggggtacca gaatctggcg agatccggac tctaaagccg 60

tgtctgctgc gccgcaacta cagccgcgaa cagcacggcg tggccgcctc ctgcctcgaa 120

gacctgagga gcaaggcctg tgacattctg gccattgata agtccctgac accagtcacc 180

ctggctcctgg cagaggatgg caccatagtg gatgatgacg attactttct gtgtctacct 240

tccaatacta agtttgtggc attggctagt aatgagaaat gggcatacaa caattcagat 300

ggaggtacag cttggatttc ccaagagtc tttgatgtag atgaaacaga cagcggggca 360

gggttgaagt ggaagaatgt ggccaggcag ctgaaagaag atctgtccag catcatcctc 420

ctatcagagg aggacctcca gatgcttggt gacgctccct gctcagacct ggctcaggaa 480

ctacgtcaga gttgtgccac cgtccagcgg ctgcagcaca cactccaaca ggtgcttgac 540  
 caaagagagg aagtgcgtca gtccaagcag ctcctgcagc tgtacctcca ggctttggag 600  
 aaagaggggca gcctcttgtc aaagcaggaa gagtccaaag ctgccttttg tgaggaggtg 660  
 gatgcagtag acacgggtat cagcagagag acctcctcgg acgttgcgct ggcgagccac 720  
 atccttactg cactgagggga gaagcaggct ccagagctga gcttatctag tcaggatttg 780  
 gagttgggta ccaaggaaga ccccaaagca ctggctgttg ccttgaactg ggacataaag 840  
 aagacggaga ctgttcagga ggctgtgag cgggagctcg ccctgcgcct gcagcagacg 900  
 cagagcttgc attctctccg gagcatctca gcaagcaagg cctcaccacc tggtgacctg 960  
 cagaatccta agcgagccag acaggatccc acatag 996

<210> 30  
 <211> 1207  
 <212> PRT  
 <213> Homo sapiens

<400> 30

Met Leu Leu Thr Leu Ile Ile Leu Leu Pro Val Val Ser Lys Phe Ser  
 1 5 10 15

Phe Val Ser Leu Ser Ala Pro Gln His Trp Ser Cys Pro Glu Gly Thr  
 20 25 30

Leu Ala Gly Asn Gly Asn Ser Thr Cys Val Gly Pro Ala Pro Phe Leu  
 35 40 45

Ile Phe Ser His Gly Asn Ser Ile Phe Arg Ile Asp Thr Glu Gly Thr  
 50 55 60

Asn Tyr Glu Gln Leu Val Val Asp Ala Gly Val Ser Val Ile Met Asp  
 65 70 75 80

Phe His Tyr Asn Glu Lys Arg Ile Tyr Trp Val Asp Leu Glu Arg Gln  
 85 90 95

Leu Leu Gln Arg Val Phe Leu Asn Gly Ser Arg Gln Glu Arg Val Cys  
 100 105 110

Asn Ile Glu Lys Asn Val Ser Gly Met Ala Ile Asn Trp Ile Asn Glu  
 115 120 125

Glu Val Ile Trp Ser Asn Gln Gln Glu Gly Ile Ile Thr Val Thr Asp  
 130 135 140

Met Lys Gly Asn Asn Ser His Ile Leu Leu Ser Ala Leu Lys Tyr Pro  
 145 150 155 160  
 Ala Asn Val Ala Val Asp Pro Val Glu Arg Phe Ile Phe Trp Ser Ser  
 165 170 175  
 Glu Val Ala Gly Ser Leu Tyr Arg Ala Asp Leu Asp Gly Val Gly Val  
 180 185 190  
 Lys Ala Leu Leu Glu Thr Ser Glu Lys Ile Thr Ala Val Ser Leu Asp  
 195 200 205  
 Val Leu Asp Lys Arg Leu Phe Trp Ile Gln Tyr Asn Arg Glu Gly Ser  
 210 215 220  
 Asn Ser Leu Ile Cys Ser Cys Asp Tyr Asp Gly Gly Ser Val His Ile  
 225 230 235 240  
 Ser Lys His Pro Thr Gln His Asn Leu Phe Ala Met Ser Leu Phe Gly  
 245 250 255  
 Asp Arg Ile Phe Tyr Ser Thr Trp Lys Met Lys Thr Ile Trp Ile Ala  
 260 265 270  
 Asn Lys His Thr Gly Lys Asp Met Val Arg Ile Asn Leu His Ser Ser  
 275 280 285  
 Phe Val Pro Leu Gly Glu Leu Lys Val Val His Pro Leu Ala Gln Pro  
 290 295 300  
 Lys Ala Glu Asp Asp Thr Trp Glu Pro Glu Gln Lys Leu Cys Lys Leu  
 305 310 315 320  
 Arg Lys Gly Asn Cys Ser Ser Thr Val Cys Gly Gln Asp Leu Gln Ser  
 325 330 335  
 His Leu Cys Met Cys Ala Glu Gly Tyr Ala Leu Ser Arg Asp Arg Lys  
 340 345 350  
 Tyr Cys Glu Asp Val Asn Glu Cys Ala Phe Trp Asn His Gly Cys Thr  
 355 360 365  
 Leu Gly Cys Lys Asn Thr Pro Gly Ser Tyr Tyr Cys Thr Cys Pro Val  
 370 375 380  
 Gly Phe Val Leu Leu Pro Asp Gly Lys Arg Cys His Gln Leu Val Ser  
 385 390 395 400



Cys Pro Arg Asn Val Ser Glu Cys Ser His Asp Cys Val Leu Thr Ser  
405 410 415

Glu Gly Pro Leu Cys Phe Cys Pro Glu Gly Ser Val Leu Glu Arg Asp  
420 425 430

Gly Lys Thr Cys Ser Gly Cys Ser Ser Pro Asp Asn Gly Gly Cys Ser  
435 440 445

Gln Leu Cys Val Pro Leu Ser Pro Val Ser Trp Glu Cys Asp Cys Phe  
450 455 460

Pro Gly Tyr Asp Leu Gln Leu Asp Glu Lys Ser Cys Ala Ala Ser Gly  
465 470 475 480

Pro Gln Pro Phe Leu Leu Phe Ala Asn Ser Gln Asp Ile Arg His Met  
485 490 495

His Phe Asp Gly Thr Asp Tyr Gly Thr Leu Leu Ser Gln Gln Met Gly  
500 505 510

Met Val Tyr Ala Leu Asp His Asp Pro Val Glu Asn Lys Ile Tyr Phe  
515 520 525

Ala His Thr Ala Leu Lys Trp Ile Glu Arg Ala Asn Met Asp Gly Ser  
530 535 540

Gln Arg Glu Arg Leu Ile Glu Glu Gly Val Asp Val Pro Glu Gly Leu  
545 550 555 560

Ala Val Asp Trp Ile Gly Arg Arg Phe Tyr Trp Thr Asp Arg Gly Lys  
565 570 575

Ser Leu Ile Gly Arg Ser Asp Leu Asn Gly Lys Arg Ser Lys Ile Ile  
580 585 590

Thr Lys Glu Asn Ile Ser Gln Pro Arg Gly Ile Ala Val His Pro Met  
595 600 605

Ala Lys Arg Leu Phe Trp Thr Asp Thr Gly Ile Asn Pro Arg Ile Glu  
610 615 620

Ser Ser Ser Leu Gln Gly Leu Gly Arg Leu Val Ile Ala Ser Ser Asp  
 625 630 635 640  
 Leu Ile Trp Pro Ser Gly Ile Thr Ile Asp Phe Leu Thr Asp Lys Leu  
 645 650 655  
 Tyr Trp Cys Asp Ala Lys Gln Ser Val Ile Glu Met Ala Asn Leu Asp  
 660 665 670  
 Gly Ser Lys Arg Arg Arg Leu Thr Gln Asn Asp Val Gly His Pro Phe  
 675 680 685  
 Ala Val Ala Val Phe Glu Asp Tyr Val Trp Phe Ser Asp Trp Ala Met  
 690 695 700  
 Pro Ser Val Ile Arg Val Asn Lys Arg Thr Gly Lys Asp Arg Val Arg  
 705 710 715 720  
 Leu Gln Gly Ser Met Leu Lys Pro Ser Ser Leu Val Val Val His Pro  
 725 730 735  
 Leu Ala Lys Pro Gly Ala Asp Pro Cys Leu Tyr Gln Asn Gly Gly Cys  
 740 745 750  
 Glu His Ile Cys Lys Lys Arg Leu Gly Thr Ala Trp Cys Ser Cys Arg  
 755 760 765  
 Glu Gly Phe Met Lys Ala Ser Asp Gly Lys Thr Cys Leu Ala Leu Asp  
 770 775 780  
 Gly His Gln Leu Leu Ala Gly Gly Glu Val Asp Leu Lys Asn Gln Val  
 785 790 795 800  
 Thr Pro Leu Asp Ile Leu Ser Lys Thr Arg Val Ser Glu Asp Asn Ile  
 805 810 815  
 Thr Glu Ser Gln His Met Leu Val Ala Glu Ile Met Val Ser Asp Gln  
 820 825 830  
 Asp Asp Cys Ala Pro Val Gly Cys Ser Met Tyr Ala Arg Cys Ile Ser  
 835 840 845  
 Glu Gly Glu Asp Ala Thr Cys Gln Cys Leu Lys Gly Phe Ala Gly Asp  
 850 855 860  
 Gly Lys Leu Cys Ser Asp Ile Asp Glu Cys Glu Met Gly Val Pro Val  
 865 870 875 880

Cys Pro Pro Ala Ser Ser Lys Cys Ile Asn Thr Glu Gly Gly Tyr Val  
 885 890 895  
 Cys Arg Cys Ser Glu Gly Tyr Gln Gly Asp Gly Ile His Cys Leu Asp  
 900 905 910  
 Ile Asp Glu Cys Gln Leu Gly Val His Ser Cys Gly Glu Asn Ala Ser  
 915 920 925  
 Cys Thr Asn Thr Glu Gly Gly Tyr Thr Cys Met Cys Ala Gly Arg Leu  
 930 935 940  
 Ser Glu Pro Gly Leu Ile Cys Pro Asp Ser Thr Pro Pro Pro His Leu  
 945 950 955 960  
 Arg Glu Asp Asp His His Tyr Ser Val Arg Asn Ser Asp Ser Glu Cys  
 965 970 975  
 Pro Leu Ser His Asp Gly Tyr Cys Leu His Asp Gly Val Cys Met Tyr  
 980 985 990  
 Ile Glu Ala Leu Asp Lys Tyr Ala Cys Asn Cys Val Val Gly Tyr Ile  
 995 1000 1005  
 Gly Glu Arg Cys Gln Tyr Arg Asp Leu Lys Trp Trp Glu Leu Arg  
 1010 1015 1020  
 His Ala Gly His Gly Gln Gln Gln Lys Val Ile Val Val Ala Val  
 1025 1030 1035  
 Cys Val Val Val Leu Val Met Leu Leu Leu Leu Ser Leu Trp Gly  
 1040 1045 1050  
 Ala His Tyr Tyr Arg Thr Gln Lys Leu Leu Ser Lys Asn Pro Lys  
 1055 1060 1065  
 Asn Pro Tyr Glu Glu Ser Ser Arg Asp Val Arg Ser Arg Arg Pro  
 1070 1075 1080  
 Ala Asp Thr Glu Asp Gly Met Ser Ser Cys Pro Gln Pro Trp Phe  
 1085 1090 1095

Val Val Ile Lys Glu His Gln Asp Leu Lys Asn Gly Gly Gln Pro  
1100 1105 1110

Val Ala Gly Glu Asp Gly Gln Ala Ala Asp Gly Ser Met Gln Pro  
1115 1120 1125

Thr Ser Trp Arg Gln Glu Pro Gln Leu Cys Gly Met Gly Thr Glu  
1130 1135 1140

Gln Gly Cys Trp Ile Pro Val Ser Ser Asp Lys Gly Ser Cys Pro  
1145 1150 1155

Gln Val Met Glu Arg Ser Phe His Met Pro Ser Tyr Gly Thr Gln  
1160 1165 1170

Thr Leu Glu Gly Gly Val Glu Lys Pro His Ser Leu Leu Ser Ala  
1175 1180 1185

Asn Pro Leu Trp Gln Gln Arg Ala Leu Asp Pro Pro His Gln Met  
1190 1195 1200

Glu Leu Thr Gln  
1205

<210> 31

<211> 3624

<212> DNA

<213> Homo sapiens

<400> 31

atgctgctca ctcttatcat tctgttgcca gtagtttcaa aatttagttt tgttagtctc	60
tcagcaccgc agcactggag ctgtcctgaa ggtactctcg caggaaatgg gaattctact	120
tgtgtgggtc ctgcaccctt cttaattttc tcccatggaa atagtatctt taggattgac	180
acagaaggaa ccaattatga gcaattggtg gtggatgctg gtgtctcagt gatcatggat	240
tttcattata atgagaaaag aatctattgg gtggatttag aaagacaact tttgcaaaga	300
gtttttctga atgggtcaag gcaagagaga gtatgtaata tagagaaaaa tgtttctgga	360
atggcaataa attggataaa tgaagaagtt atttggtcaa atcaacagga aggaatcatt	420
acagtaacag atatgaaagg aaataattcc cacattcttt taagtgcctt aaaatatacct	480
gcaaatgtag cagttgatcc agtagaaaagg tttatatattt ggtcttcaga ggtggctgga	540
agcctttata gagcagatct cgatgggtgtg ggagtgaagg ctctgttgga gacatcagag	600
aaaataacag ctgtgtcatt ggatgtgctt gataagcggc tgttttggat tcagtacaac	660
agagaaggaa gcaattctct tatttgctcc tgtgattatg atggagggtt tgtccacatt	720

agtaaacatc	caaacacagca	taattttgttt	geaatgtccc	tttttgggtga	cegtatcttc	780
tattcaacat	ggaaaatgaa	gacaatttgg	atagccaaca	aacacactgg	aaaggacatg	840
gttagaatta	acctccattc	atcattttgta	ccacttgggtg	aactgaaagt	agtgcaccca	900
cttgcacaa	ccaaggcaga	agatgacact	tgggagcctg	agcagaaact	ttgcaaattg	960
aggaaaggaa	actgcagcag	cactgtgtgt	gggcaagacc	tccagtcaca	cttgtgcatg	1020
tgtgcagagg	gatacgccct	aagtcgagac	cggaagtact	gtgaagatgt	taatgaatgt	1080
gcttttttga	atcatggctg	tactcttggg	tgtaaaaaaca	cccctggatc	ctattactgc	1140
acgtgccctg	taggatttgt	tctgcttcct	gatgggaaac	gatgtcatca	acttgtttcc	1200
tgtccacgca	atgtgtctga	atgcagccat	gactgtgttc	tgacatcaga	aggtccctta	1260
tgtttctgtc	ctgaaggctc	agtgcctgag	agagatggga	aaacatgtag	cggttggttc	1320
tcacccgata	atggtggatg	tagccagctc	tgcgttcctc	ttagcccagt	atcctgggaa	1380
tgtgattgct	ttcctgggta	tgacctacaa	ctggatgaaa	aaagctgtgc	agcttcagga	1440
ccacaaccat	ttttgctgtt	tgccaattct	caagatatct	gacacatgca	ttttgatgga	1500
acagactatg	gaactctgct	cagccagcag	atgggaatgg	tttatgcect	agatcatgac	1560
cctgtggaaa	ataagatata	ctttgcccac	acagccctga	agtggataga	gagagctaata	1620
atggatgggt	cccagcgaga	aaggcttatt	gaggaaggag	tagatgtgcc	agaaggctct	1680
gctgtggact	ggattggccg	tagattctat	tggacagaca	gagggaaatc	tctgattgga	1740
aggagtgatt	taaatgggaa	acgttcctaaa	ataatcacta	aggagaacat	ctctcaacca	1800
cgaggaattg	ctgttcaccc	aatggccaag	agattattct	ggactgatac	agggattaat	1860
ccacgaattg	aaagtctctc	cctccaaggc	cttgcccgctc	tggttatagc	cagctctgat	1920
ctaactctggc	ccagtggaat	aacgattgac	ttcttaactg	acaagttgta	ctgggtgcgat	1980
gccaaagcagt	ctgtgattga	aatggccaat	ctggatgggt	caaaaagccg	aagacttacc	2040
cagaatgatg	taggtcacc	atttgetgta	geagtgtttg	aggattatgt	gtggttctca	2100
gattgggcta	tgccatcagt	aataagagta	aacaagagga	ctggcaaaga	tagagtacgt	2160
ctccaaggca	gcatgctgaa	gccctcatca	ctgggtgtgg	ttcatccatt	ggcaaaaacca	2220
ggagcagatc	cctgcttata	tcaaaaacgga	ggctgtgaac	atatttgcaa	aaagaggctt	2280
ggaactgctt	ggtgttcgtg	tcgtgaagg	tttatgaaag	cctcagatgg	gaaaacgtgt	2340
ctggctctgg	atggtcatca	gctgttggca	ggtggtgaag	ttgatctaaa	gaaccaagta	2400
acaccattgg	acatcttgtc	caagactaga	gtgtcagaag	ataacattac	agaatctcaa	2460
cacatgctag	tggctgaaat	catggtgtca	gatcaagatg	actgtgctcc	tgtgggatgc	2520
agcatgtatg	ctcgggtgtat	ttcagaggga	gaggatgccca	catgtcagtg	tttgaaagga	2580

```

tttgctgggg atggaaaact atgttctgat atagatgaat gtgagatggg tgteecagtg 2640
tgccccctg cctcctccaa gtgcatcaac accgaagggtg gttatgtctg ccgggtgctca 2700
gaaggctacc aaggagatgg gattcactgt cttgatattg atgagtgcc aactgggggtg 2760
cacagctgtg gagagaatgc cagctgcaca aatacagagg gaggtatac ctgcatgtgt 2820
gctggacgcc tgtctgaacc aggactgatt tgccctgact ctactccacc ccctcacctc 2880
aggggaagatg accaccacta ttccgtaaga aatagtgact ctgaatgtcc cctgtccac 2940
gatgggtact gcctccatga tgggtgtgtc atgtatattg aagcattgga caagtatgca 3000
tgcaactgtg ttgttggcta catcggggag cgatgtcagt accgagacct gaagtgggtg 3060
gaactgcgcc acgctggcca cgggcagcag cagaagggtca tcgtgggtggc tgtctgctg 3120
gtgggtgctt tcatgtgtc cctcctgagc ctgtgggggg cccactacta caggactcag 3180
aagctgctat cgaaaaaccc aaagaatcct tatgaggagt cgagcagaga tgtgaggagt 3240
cgcaggcctg ctgacactga ggatgggatg tctcttgcc ctcaaccttg gtttgtggtt 3300
ataaaagaac accaagacct caagaatggg ggtcaaccag tggtgtgtga ggatggccag 3360
gcagcagatg ggtcaatgca accaacttca tggaggcagg agccccagtt atgtggaatg 3420
ggcacagagc aaggctgctg gattccagta tccagtata agggctcctg tccccaggta 3480
atggagcgaa gctttcatat gccctcctat gggacacaga cccttgaagg ggggtgtcag 3540
aagccccatt ctctcctatc agctaaccac ttatggcaac aaagggccct ggaccacca 3600
caccaaattg agctgactca gtga 3624

```

```

<210> 32
<211> 191
<212> PRT
<213> Homo sapiens
<400> 32

```

```

Met Asn Phe Leu Leu Ser Trp Val His Trp Ser Leu Ala Leu Leu Leu
1          5          10          15

```

```

Tyr Leu His His Ala Lys Trp Ser Gln Ala Ala Pro Met Ala Glu Gly
          20          25          30

```

```

Gly Gly Gln Asn His His Glu Val Val Lys Phe Met Asp Val Tyr Gln
          35          40          45

```

```

Arg Ser Tyr Cys His Pro Ile Glu Thr Leu Val Asp Ile Phe Gln Glu
50          55          60

```

```

Tyr Pro Asp Glu Ile Glu Tyr Ile Phe Lys Pro Ser Cys Val Pro Leu
65          70          75          80

```

Met Arg Cys Gly Gly Cys Cys Asn Asp Glu Gly Leu Glu Cys Val Pro  
85 90 95

Thr Glu Glu Ser Asn Ile Thr Met Gln Ile Met Arg Ile Lys Pro His  
100 105 110

Gln Gly Gln His Ile Gly Glu Met Ser Phe Leu Gln His Asn Lys Cys  
115 120 125

Glu Cys Arg Pro Lys Lys Asp Arg Ala Arg Gln Glu Asn Pro Cys Gly  
130 135 140

Pro Cys Ser Glu Arg Arg Lys His Leu Phe Val Gln Asp Pro Gln Thr  
145 150 155 160

Cys Lys Cys Ser Cys Lys Asn Thr Asp Ser Arg Cys Lys Ala Arg Gln  
165 170 175

Leu Glu Leu Asn Glu Arg Thr Cys Arg Cys Asp Lys Pro Arg Arg  
180 185 190

<210> 33  
<211> 576  
<212> DNA  
<213> Homo sapiens

<400> 33  
atgaactttc tgctgtcttg ggtgcattgg agccttgccct tgctgctcta cctccaccat 60  
gccaagtggc cccaggctgc acccatggca gaaggagggg ggcagaatca tcacgaagtg 120  
gtgaagttca tggatgtcta tcagcgcagc tactgccatc caatcgagac cctggtggac 180  
atcttccagg agtaccctga tgagatcgag tacatcttca agccatcctg tgtgcccctg 240  
atgcgatgcg ggggctgctg caatgacgag ggcctggagt gtgtgcccac tgaggagtcc 300  
aacatcacca tgcagattat gcggatcaaa cctcaccaag gccagcacat aggagagatg 360  
agcttcctac agcacaacaa atgtgaatgc agaccaaaga aagatagagc aagacaagaa 420  
aatccctgtg ggccttgctc agagcggaga aagcatttgt ttgtacaaga tccgcagacg 480  
tgtaaagtgt cctgcaaaaa cacagactcg cgttgcaagg cgaggcagct tgagttaaac 540  
gaacgtactt gcagatgtga caagccgagg cgggtga 576

<210> 34  
 <211> 175  
 <212> PRT  
 <213> Homo sapiens

<400> 34

Met Asp Ile Ala Ile His His Pro Trp Ile Arg Arg Pro Phe Phe Pro  
 1 5 10 15

Phe His Ser Pro Ser Arg Leu Phe Asp Gln Phe Phe Gly Glu His Leu  
 20 25 30

Leu Glu Ser Asp Leu Phe Pro Thr Ser Thr Ser Leu Ser Pro Phe Tyr  
 35 40 45

Leu Arg Pro Pro Ser Phe Leu Arg Ala Pro Ser Trp Phe Asp Thr Gly  
 50 55 60

Leu Ser Glu Met Arg Leu Glu Lys Asp Arg Phe Ser Val Asn Leu Asp  
 65 70 75 80

Val Lys His Phe Ser Pro Glu Glu Leu Lys Val Lys Val Leu Gly Asp  
 85 90 95

Val Ile Glu Val His Gly Lys His Glu Glu Arg Gln Asp Glu His Gly  
 100 105 110

Phe Ile Ser Arg Glu Phe His Arg Lys Tyr Arg Ile Pro Ala Asp Val  
 115 120 125

Asp Pro Leu Thr Ile Thr Ser Ser Leu Ser Ser Asp Gly Val Leu Thr  
 130 135 140

Val Asn Gly Pro Arg Lys Gln Val Ser Gly Pro Glu Arg Thr Ile Pro  
 145 150 155 160

Ile Thr Arg Glu Glu Lys Pro Ala Val Thr Ala Ala Pro Lys Lys  
 165 170 175

<210> 35  
 <211> 528  
 <212> DNA  
 <213> Homo sapiens

<400> 35

atggacatcg ccateccacca cccctggatc cgccgcccct tctttccttt ccaactcccc 60

agccgcctct ttgaccagtt cttcggagag cacctgttgg agtctgatct tttcccgacg 120

tctacttccc tgagtccctt ctaccttcgg ccacctcct tctgcgggc acccagctgg 180



ttgtgacactg gaetctcaga gatgcgectg gagaaggaca ggttctctgt caacctggat 240  
 gtgaagcact tctccccaga ggaactcaaa gttaagggtg tgggagatgt gattgaggtg 300  
 catggaaaac atgaagagcg ccaggatgaa catggtttca tctccaggga gttccacagg 360  
 aaataccgga tcccagctga tgtagaccct ctcaccatta cttcatccct gtcactgat 420  
 ggggtcctca ctgtgaatgg accaaggaaa caggtctctg gccctgagcg caccattccc 480  
 atcacccgtg aagagaagcc tgctgtcacc gcagccccc aaaaatag 528

<210> 36  
 <211> 378  
 <212> PRT  
 <213> *Drosophila melanogaster*

<400> 36

Met Thr Met Ser Thr Asn Asn Cys Glu Ser Met Thr Ser Tyr Phe Thr  
1 5 10 15

Asn Ser Tyr Met Gly Ala Asp Met His His Gly His Tyr Pro Gly Asn  
20 25 30

Gly Val Thr Asp Leu Asp Ala Gln Gln Met His His Tyr Ser Gln Asn  
35 40 45

Ala Asn His Gln Gly Asn Met Pro Tyr Pro Arg Phe Pro Pro Tyr Asp  
50 55 60

Arg Met Pro Tyr Tyr Asn Gly Gln Gly Met Asp Gln Gln Gln Gln His  
65 70 75 80

Gln Val Tyr Ser Arg Pro Asp Ser Pro Ser Ser Gln Val Gly Gly Val  
85 90 95

Met Pro Gln Ala Gln Thr Asn Gly Gln Leu Gly Val Pro Gln Gln Gln  
100 105 110

Gln Gln Gln Gln Gln Gln Pro Ser Gln Asn Gln Gln Gln Gln Gln Ala  
115 120 125

Gln Gln Ala Pro Gln Gln Leu Gln Gln Gln Leu Pro Gln Val Thr Gln  
130 135 140

Gln Val Thr His Pro Gln Gln Gln Gln Gln Gln Pro Val Val Tyr Ala  
145 150 155 160

Ser Cys Lys Leu Gln Ala Ala Val Gly Gly Leu Gly Met Val Pro Glu  
165 170 175

Gly Gly Ser Pro Pro Leu Val Asp Gln Met Ser Gly His His Met Asn  
 180 185 190  
 Ala Gln Met Thr Leu Pro His His Met Gly His Pro Gln Ala Gln Leu  
 195 200 205  
 Gly Tyr Thr Asp Val Gly Val Pro Asp Val Thr Glu Val His Gln Asn  
 210 215 220  
 His His Asn Met Gly Met Tyr Gln Gln Gln Ser Gly Val Pro Pro Val  
 225 230 235 240  
 Gly Ala Pro Pro Gln Gly Met Met His Gln Gly Gln Gly Pro Pro Gln  
 245 250 255  
 Met His Gln Gly His Pro Gly Gln His Thr Pro Pro Ser Gln Asn Pro  
 260 265 270  
 Asn Ser Gln Ser Ser Gly Met Pro Ser Pro Leu Tyr Pro Trp Met Arg  
 275 280 285  
 Ser Gln Phe Gly Lys Cys Gln Glu Arg Lys Arg Gly Arg Gln Thr Tyr  
 290 295 300  
 Thr Arg Tyr Gln Thr Leu Glu Leu Glu Lys Glu Phe His Phe Asn Arg  
 305 310 315 320  
 Tyr Leu Thr Arg Arg Arg Arg Ile Glu Ile Ala His Ala Leu Cys Leu  
 325 330 335  
 Thr Glu Arg Gln Ile Lys Ile Trp Phe Gln Asn Arg Arg Met Lys Trp  
 340 345 350  
 Lys Lys Glu Asn Lys Thr Lys Gly Glu Pro Gly Ser Gly Gly Glu Gly  
 355 360 365  
 Asp Glu Ile Thr Pro Pro Asn Ser Pro Gln  
 370 375

<210> 37  
 <211> 1137  
 <212> DNA  
 <213> Drosophila melanogaster

<400> 37  
 atgacgatga gtacaaacaa ctgagagagc atgacctcgt acttcaccaa ctcgtacatg 60  
 ggggaggaca tgcattcatg gactacccg ggcaacgggg tcaccgacct ggacgcccag 120  
 cagatgcacc actacagcca gaacgcgaat caccagggga acatgcccta cccgcgcttt 180  
 ccaccctacg accgcatgcc ctactacaac ggccagggga tggaccagca gcagcagcac 240  
 caggtctact cccgcccgga cagcccctcc agccaggtgg gcgggggtcat gcccagggcg 300  
 cagaccaacg gtcagttggg tgttccccag cagcaacagc agcagcagca acagcctcgc 360  
 cagaaccagc agcaacagca ggccgagcag gcccacagc aactgcagca gcagctgccc 420  
 caggtgacgc aacaggtgac acatccgcag cagcaacaac agcagcccggt cgtctaegcc 480  
 agctgcaagt tgcaagcggc cgttggtgga ctgggtatgg tccccagggg cggatcgctt 540  
 ccgctggtgg atcaaatgac cggtcaccac atgaacgcgc agatgaagct gcccacacac 600  
 atgggacatc cgcaggcgca gttgggctat acggaegttg gagttcccga cgtgacagag 660  
 gtccatcaga accatcaca catgggcatg taccagcagc agtcgggagt tccgcccgtg 720  
 ggtgcccac ctcagggcag gatgcaccag ggccagggtc ctccacagat gcaccagggg 780  
 catcctggcc aacacacgcc tccttcccaa aaccggaact cgcagtcctc ggggatgccg 840  
 tctccactgt atccctggat gcgaagtcag tttggtaagt gtcaagaacg caaacgcgga 900  
 aggagacat acacccggta ccagactcta gagctagaga aggagtttca cttcaatcgc 960  
 tacttgaccc gtcggcggaag gatcgagatc gccacgccc tgtgcctcac ggagcgccag 1020  
 ataaagattt gggtccagaa tcggcgcatg aagtgggaag aggagaacaa gacgaagggc 1080  
 gagccgggat cgggaggcga aggcgacgag ataaccacac ceaacagtcc gcagtag 1137

<210> 38  
 <211> 163  
 <212> PRT  
 <213> Homo sapiens

<400> 38

Met Ser Glu Ser Gly Phe Lys Leu Leu Cys Gln Cys Leu Gly Phe Gly  
 1 5 10 15

Ser Gly His Phe Arg Cys Asp Ser Ser Arg Trp Cys His Asp Asn Gly  
 20 25 30

Val Asn Tyr Lys Ile Gly Glu Lys Trp Asp Arg Gln Gly Glu Asn Gly  
 35 40 45

Gln Met Met Ser Cys Thr Cys Leu Gly Asn Gly Lys Gly Glu Phe Lys  
 50 55 60

Cys Asp Pro His Glu Ala Thr Cys Tyr Asp Asp Gly Lys Thr Tyr His  
 65 70 75 80

Val Gly Glu Gln Trp Gln Lys Glu Tyr Leu Gly Ala Ile Cys Ser Cys  
 85 90 95

Thr Cys Phe Gly Gly Gln Arg Gly Trp Arg Cys Asp Asn Cys Arg Arg  
 100 105 110

Pro Gly Gly Glu Pro Ser Pro Glu Gly Thr Thr Gly Gln Ser Tyr Asn  
 115 120 125

Gln Tyr Ser Gln Arg Tyr His Gln Arg Thr Asn Thr Asn Val Asn Cys  
 130 135 140

Pro Ile Glu Cys Phe Met Pro Leu Asp Val Gln Ala Asp Arg Glu Asp  
 145 150 155 160

Ser Arg Glu

<210> 39  
 <211> 492  
 <212> DNA  
 <213> Homo sapiens

<400> 39  
 atgtctgaat caggctttaa actggtgtgc cagtgccttag gettttgaag tggatcatcttc 60  
 agatgtgatt catctagatg gtgccatgac aatgggtgtga actacaagat tggagagaag 120  
 tgggaccgctc agggagaaaa tggccagatg atgagctgca catgtcttgg gaacggaaaa 180  
 ggagaattca agtgtgaccc tcatgaggca acgtgttatg atgatgggaa gacataccac 240  
 gtaggagAAC agtggcagaa ggaatatctc ggtgccattt gctcctgcac atgctttgga 300  
 ggccagcggg gctggcgctg tgacaactgc cgcagacctg ggggtgaacc cagtcccgaa 360  
 ggcactactg gccagtccta caaccagtat tctcagagat accatcagag aacaaacact 420  
 aatgttaatt gcccaattga gtgcttcatg ccttttagatg tacaggctga cagagaagat 480  
 tcccgagagt ag 492

<210> 40  
 <211> 282  
 <212> PRT  
 <213> Homo sapiens

<400> 40

Met Arg Gly Met Lys Leu Leu Gly Ala Leu Leu Ala Leu Ala Ala Leu  
 1 5 10 15

Leu Gln Gly Ala Val Ser Leu Lys Ile Ala Ala Phe Asn Ile Gln Thr  
 20 25 30

Phe Gly Glu Thr Lys Met Ser Asn Ala Thr Leu Val Ser Tyr Ile Val  
 35 40 45

Gln Ile Leu Ser Arg Tyr Asp Ile Ala Leu Val Gln Glu Val Arg Asp  
 50 55 60

Ser His Leu Thr Ala Val Gly Lys Leu Leu Asp Asn Leu Asn Gln Asp  
 65 70 75 80

Ala Pro Asp Thr Tyr His Tyr Val Val Ser Glu Pro Leu Gly Arg Asn  
 85 90 95

Ser Tyr Lys Glu Arg Tyr Leu Phe Val Tyr Arg Pro Asp Gln Val Ser  
 100 105 110

Ala Val Asp Ser Tyr Tyr Tyr Asp Asp Gly Cys Glu Pro Cys Gly Asn  
 115 120 125

Asp Thr Phe Asn Arg Glu Pro Ala Ile Val Arg Phe Phe Ser Arg Phe  
 130 135 140

Thr Glu Val Arg Glu Phe Ala Ile Val Pro Leu His Ala Ala Pro Gly  
 145 150 155 160

Asp Ala Val Ala Glu Ile Asp Ala Leu Tyr Asp Val Tyr Leu Asp Val  
 165 170 175

Gln Glu Lys Trp Gly Leu Glu Asp Val Met Leu Met Gly Asp Phe Asn  
 180 185 190

Ala Gly Cys Ser Tyr Val Arg Pro Ser Gln Trp Ser Ser Ile Arg Leu  
 195 200 205

Trp Thr Ser Pro Thr Phe Gln Trp Leu Ile Pro Asp Ser Ala Asp Thr  
 210 215 220

Thr Ala Thr Pro Thr His Cys Ala Tyr Asp Arg Ile Val Val Ala Gly  
 225 230 235 240

Met Leu Leu Arg Gly Ala Val Val Pro Asp Ser Ala Leu Pro Phe Asn  
 245 250 255

Phe Gln Ala Ala Tyr Gly Leu Ser Asp Gln Leu Ala Gln Ala Ile Ser  
 260 265 270

Asp His Tyr Pro Val Glu Val Met Leu Lys  
 275 280

<210> 41  
 <211> 849  
 <212> DNA  
 <213> Homo sapiens

<400> 41  
 atgaggggca tgaagctgct gggggcgctg ctggcactgg cggccctact gcagggggcc 60  
 gtgtccctga agatcgcagc cttcaacatc cagacatttg gggagaccaa gatgtccaat 120  
 gccaccctcg tcagctacat tgtgcagatc ctgagccgct atgacatcgc cctgggtccag 180  
 gaggtcagag acagccacct gactgccgtg ggggaagctgc tggacaacct caatcaggat 240  
 gcaccagaca cctatcacta cgtggtcagt gagccactgg gacggaacag ctataaggag 300  
 cgctacctgt tcgtgtacag gcctgaccag gtgtctgcgg tggacagcta ctactacgat 360  
 gatggctgcg agccctgcgg gaacgacacc ttcaaccgag agccagccat tgtcaggttc 420  
 ttctcccgtt tcacagaggt caggagagttt gccattgttc ccctgcatgc ggccccgggg 480  
 gacgcagtag ccgagatcga cgctctctat gacgtctacc tggatgtcca agagaaatgg 540  
 ggcttggagg acgtcatggt gatgggcgac ttcaatgcgg gctgcagcta tgtgagaccc 600  
 tccagtggt catccatccg cctgtggaca agccccacct tccagtggt gatccccgac 660  
 agcgctgaca ccacagctac acccagcac tgtgcctatg acaggatcgt ggttgcaggg 720  
 atgctgctcc gaggcgccgt tggtcccgac tcggctcttc cctttaactt ccaggctgcc 780  
 tatggcctga gtgaccaact ggcccaagcc atcagtgacc actatccagt ggaggtgatg 840  
 ctgaagtga 849

<210> 42  
 <211> 360  
 <212> PRT  
 <213> Homo sapiens

<400> 42

```

Met Ile Pro Leu Leu Leu Ala Ala Leu Leu Cys Val Pro Ala Gly Ala
1           5           10           15

Leu Thr Cys Tyr Gly Asp Ser Gly Gln Pro Val Asp Trp Phe Val Val
          20           25           30

Tyr Lys Leu Pro Ala Leu Arg Gly Ser Gly Glu Ala Ala Gln Arg Gly
          35           40           45

Leu Gln Tyr Lys Tyr Leu Asp Glu Ser Ser Gly Gly Trp Arg Asp Gly
50           55           60

Arg Ala Leu Ile Asn Ser Pro Glu Gly Ala Val Gly Arg Ser Leu Gln
65           70           75           80

Pro Leu Tyr Arg Ser Asn Thr Ser Gln Leu Ala Phe Leu Leu Tyr Asn
          85           90           95

Asp Gln Pro Pro Gln Pro Ser Lys Ala Gln Asp Ser Ser Met Arg Gly
          100          105          110

His Thr Lys Gly Val Leu Leu Leu Asp His Asp Gly Gly Phe Trp Leu
115           120           125

Val His Ser Val Pro Asn Phe Pro Pro Pro Ala Ser Ser Ala Ala Tyr
130           135           140

Ser Trp Pro His Ser Ala Cys Thr Tyr Gly Gln Thr Leu Leu Cys Val
145           150          155          160

Ser Phe Pro Phe Ala Gln Phe Ser Lys Met Gly Lys Gln Leu Thr Tyr
          165          170          175

Thr Tyr Pro Trp Val Tyr Asn Tyr Gln Leu Glu Gly Ile Phe Ala Gln
          180          185          190

Glu Phe Pro Asp Leu Glu Asn Val Val Lys Gly His His Val Ser Gln
          195          200          205

Glu Pro Trp Asn Ser Ser Ile Thr Leu Thr Ser Gln Ala Gly Ala Val
210           215          220

```

Phe Gln Ser Phe Ala Lys Phe Ser Lys Phe Gly Asp Asp Leu Tyr Ser  
225 230 235 240

Gly Trp Leu Ala Ala Ala Leu Gly Thr Asn Leu Gln Val Gln Phe Trp  
245 250 255

His Lys Thr Val Gly Ile Leu Pro Ser Asn Cys Ser Asp Ile Trp Gln  
260 265 270

Val Leu Asn Val Asn Gln Ile Ala Phe Pro Gly Pro Ala Gly Pro Ser  
275 280 285

Phe Asn Ser Thr Glu Asp His Ser Lys Trp Cys Val Ser Pro Lys Gly  
290 295 300

Pro Trp Thr Cys Val Gly Asp Met Asn Arg Asn Gln Gly Glu Glu Gln  
305 310 315 320

Arg Gly Gly Gly Thr Leu Cys Ala Gln Leu Pro Ala Leu Trp Lys Ala  
325 330 335

Phe Gln Pro Leu Val Lys Asn Tyr Gln Pro Cys Asn Gly Met Ala Arg  
340 345 350

Lys Pro Ser Arg Ala Tyr Lys Ile  
355 360

<210> 43

<211> 1083

<212> DNA

<213> Homo sapiens

<400> 43

atgatcccg	tgctgctggc	agcgctgctg	tgcgccccg	ccggggccct	gacctgctac	60
ggggactccg	ggcagcctgt	agactgggtc	gtggctctaca	agctgccagc	tcttagaggg	120
tccggggagg	cggcgagag	agggtgcag	tacaagtatc	tggacgagag	ctccggaggc	180
tggcgggacg	gcagggcact	catcaacagc	ccggaggggg	ccgtgggccg	aagcctgcag	240
ccgctgtacc	ggagcaacac	cagccagctc	gccttcctgc	tctacaatga	ccaaccgcct	300
caaccagca	aggctcagga	ctcttccatg	cgtgggcaca	cgaagggtgt	cctgctcctt	360
gaccacgatg	ggggcttctg	gctgggtccac	agtgtacctt	acttccctcc	accggcctcc	420
tctgctgcat	acagctggcc	tcatagcgcc	tgtacctacg	ggcagaccct	gctctgtgtg	480
tcttttccct	tcgctcagtt	ctcgaagatg	ggcaagcagc	tgacctacac	ctacccttgg	540
gtctataact	accagctgga	agggatcttt	gccaggaat	tccccgactt	ggagaatgtg	600



gteaagggcc accacgttag ccaagaaccc tggaaacagca gcateacact cacatsscag 660  
 gccggggctg ttttccagag ctttgccaag ttcagcaaat ttggagatga cctgtactcc 720  
 ggctggttgg cagcagccct tggtagcaac ctgcaggtcc agttctggca caaaactgta 780  
 ggcacctctg cctctaactg ctccgatatc tggcaggttc tgaatgtgaa ccagatagct 840  
 ttccctggac cagccggccc aagcttcaac agcacagagg accactccaa atggtgctg 900  
 tccccaaaag ggccctggac ctgcgtgggt gacatgaatc ggaaccaggg agaggagcaa 960  
 cgggggtggg gcacactgtg tgcccagctg ccagccctct ggaaagcctt ccagccgctg 1020  
 gtgaagaact accagccctg taatggcatg gccaggaagc ccagcagagc ttataagatc 1080  
 taa 1083

<210> 44  
 <211> 335  
 <212> PRT  
 <213> Homo sapiens

<400> 44

Met Asp Asn Ala Arg Met Asn Ser Phe Leu Glu Tyr Pro Ile Leu Ser  
 1 5 10 15

Ser Gly Asp Ser Gly Thr Cys Ser Ala Arg Ala Tyr Pro Ser Asp His  
 20 25 30

Arg Ile Thr Thr Phe Gln Ser Cys Ala Val Ser Ala Asn Ser Cys Gly  
 35 40 45

Gly Asp Asp Arg Phe Leu Val Gly Arg Gly Val Gln Ile Gly Ser Pro  
 50 55 60

His His His His His His His His His His Pro Gln Pro Ala Thr Tyr  
 65 70 75 80

Gln Thr Ser Gly Asn Leu Gly Val Ser Tyr Ser His Ser Ser Cys Gly  
 85 90 95

Pro Ser Tyr Gly Ser Gln Asn Phe Ser Ala Pro Tyr Ser Pro Tyr Ala  
 100 105 110

Leu Asn Gln Glu Ala Asp Val Ser Gly Gly Tyr Pro Gln Cys Ala Pro  
 115 120 125

Ala Val Tyr Ser Gly Asn Leu Ser Ser Pro Met Val Gln His His His  
 130 135 140

His His Gln Gly Tyr Ala Gly Gly Ala Val Gly Ser Pro Gln Tyr Ile  
 145 150 155 160

His His Ser Tyr Gly Gln Glu His Gln Ser Leu Ala Leu Ala Thr Tyr  
 165 170 175

Asn Asn Ser Leu Ser Pro Leu His Ala Ser His Gln Glu Ala Cys Arg  
 180 185 190

Ser Pro Ala Ser Glu Thr Ser Ser Pro Ala Gln Thr Phe Asp Trp Met  
 195 200 205

Lys Val Lys Arg Asn Pro Pro Lys Thr Gly Lys Val Gly Glu Tyr Gly  
 210 215 220

Tyr Leu Gly Gln Pro Asn Ala Val Arg Thr Asn Phe Thr Thr Lys Gln  
 225 230 235 240

Leu Thr Glu Leu Glu Lys Glu Phe His Phe Asn Lys Tyr Leu Thr Arg  
 245 250 255

Ala Arg Arg Val Glu Ile Ala Ala Ser Leu Gln Leu Asn Glu Thr Gln  
 260 265 270

Val Lys Ile Trp Phe Gln Asn Arg Arg Met Lys Gln Lys Lys Arg Glu  
 275 280 285

Lys Glu Gly Leu Leu Pro Ile Ser Pro Ala Thr Pro Pro Gly Asn Asp  
 290 295 300

Glu Lys Ala Glu Glu Ser Ser Glu Lys Ser Ser Ser Pro Cys Val  
 305 310 315 320

Pro Ser Pro Gly Ser Ser Thr Ser Asp Thr Leu Thr Thr Ser His  
 325 330 335

<210> 45  
 <211> 1008  
 <212> DNA  
 <213> Homo sapiens

<400> 45  
 atggacaatg caagaatgaa ctcttctctg gaatacccca tacttagcag tggcgactcg 60  
 gggacctgct cagcccagagc ctaccctctg gaccatagga ttacaacttt ccagtcgtgc 120  
 gcggtcagcg ccaacagttg cggcggcgac gaccgcttcc tagtgggcag ggggggtgcag 180  
 atcggttcgc cccaccacca ccaccaccac caccatcacc acccccagcc ggctacctac 240

cagacttccg ggaacctggg ggtgtcctac tccactcaa gttgtgggcc aagctatggc 300  
 tcacagaact tcagtgcgcc ttacagcccc tacgcgttaa atcaggaagc agacgtaagt 360  
 ggtgggtacc ccagtgccg tcccgctgtt tactctggaa atctctcatc tcccatggtc 420  
 cagcatcacc accaccacca gggttatgct gggggcgccg tgggctcgcc tcaatacatt 480  
 caccactcat atggacagga gcaccagagc ctggccctgg ctacgtataa taactccttg 540  
 tccccctctcc acgccagcca ccaagaagcc tgctcgctccc ccgcatcgga gacatcttct 600  
 ccagcgcaga cttttgactg gatgaaagtc aaaagaaacc ctcccaaaac agggaaagt 660  
 ggagagtacg gctacctggg tcaacccaac gcggtgcgca ccaacttcac taccaagcag 720  
 ctcacggaac tggagaagga gttccacttc aacaagtacc tgacgcgcgc ccgcagggtg 780  
 gagatcgctg catccctgca gctcaacgag acccaagtga agatctgggt ccagaaccgc 840  
 cgaatgaagc aaaagaaacg tgagaaggag ggtctcttgc ccatctctcc ggccaccccg 900  
 ccaggaaacg acgagaaggc cgaggaatcc tcagagaagt ccagctcttc gccctgcgtt 960  
 ccttccccgg ggtcttctac ctcagacact ctgactacct cccactga 1008

<210> 46  
 <211> 180  
 <212> PRT  
 <213> Homo sapiens

<400> 46

Met Gly Ile Pro Met Gly Lys Ser Met Leu Val Leu Leu Thr Phe Leu  
 1 5 10 15

Ala Phe Ala Ser Cys Cys Ile Ala Ala Tyr Arg Pro Ser Glu Thr Leu  
 20 25 30

Cys Gly Gly Glu Leu Val Asp Thr Leu Gln Phe Val Cys Gly Asp Arg  
 35 40 45

Gly Phe Tyr Phe Ser Arg Pro Ala Ser Arg Val Ser Arg Arg Ser Arg  
 50 55 60

Gly Ile Val Glu Glu Cys Cys Phe Arg Ser Cys Asp Leu Ala Leu Leu  
 65 70 75 80

Glu Thr Tyr Cys Ala Thr Pro Ala Lys Ser Glu Arg Asp Val Ser Thr  
 85 90 95

Pro Pro Thr Val Leu Pro Asp Asn Phe Pro Arg Tyr Pro Val Gly Lys  
 100 105 110

Phe Phe Gln Tyr Asp Thr Trp Lys Gln Ser Thr Gln Arg Leu Arg Arg  
 115 120 125

Gly Leu Pro Ala Leu Leu Arg Ala Arg Arg Gly His Val Leu Ala Lys  
 130 135 140

Glu Leu Glu Ala Phe Arg Glu Ala Lys Arg His Arg Pro Leu Ile Ala  
 145 150 155 160

Leu Pro Thr Gln Asp Pro Ala His Gly Gly Ala Pro Pro Glu Met Ala  
 165 170 175

Ser Asn Arg Lys  
 180

<210> 47  
 <211> 543  
 <212> DNA  
 <213> Homo sapiens

<400> 47  
 atgggaatcc caatggggaa gtcgatgctg gtgcttctca ccttcttggc cttcgcctcg 60  
 tgctgcattg ctgcttaccg cccagtgag accctgtgcg gcggggagct ggtggacacc 120  
 ctccagttcg tctgtgggga ccgcggett cacttcagca ggcccgcaag ccgtgtgagc 180  
 cgtcgcagcc gtggcatcgt tgaggagtgc tgtttccgca gctgtgacct ggccctcctg 240  
 gagacgtact gtgctacccc cgccaagtcc gagagggacg tgtcgacccc tccgaccgtg 300  
 cttccggaca acttccccag ataccccgtg ggcaagttct tccaatatga cacctggaag 360  
 cagtccaccc agcgcctgcg caggggcctg cctgccctcc tgcgtgcccg ccgggggtcac 420  
 gtgctcgcca aggagctcga ggcgttcagg gaggccaaac gtcaccgtcc cctgattgct 480  
 ctaccacccc aagaccccgc ccacgggggc gcccccccag agatggccag caatcggaag 540  
 tga 543

<210> 48  
 <211> 59  
 <212> PRT  
 <213> Homo sapiens

<400> 48

Met Ala Glu Gly Glu Ile Thr Thr Phe Thr Ala Leu Thr Glu Lys Phe  
 1 5 10 15

Asn Leu Pro Pro Gly Asn Tyr Lys Lys Pro Lys Leu Leu Tyr Cys Ser  
 20 25 30

Asn Gly Gly His Phe Leu Arg Ile Leu Pro Asp Gly Thr Val Asp Gly  
 35 40 45

Thr Arg Asp Arg Ser Asp Gln His Asn Thr Lys  
 50 55

<210> 49  
 <211> 180  
 <212> DNA  
 <213> Homo sapiens

<400> 49  
 atggctgaag gggaaatcac caccttcaca gccctgaccg agaagtttaa tctgcctcca 60  
 gggaattaca agaagcccaa actcctctac tgtagcaacg ggggccactt cctgaggatc 120  
 cttccggatg gcacagtgga tgggacaagg gacaggagcg accagcacia caccaaata 180

<210> 50  
 <211> 102  
 <212> PRT  
 <213> Human immunodeficiency virus

<400> 50

Met Glu Pro Val Asp Pro Asn Leu Glu Pro Trp Asn His Pro Gly Ser  
 1 5 10 15

Gln Pro Gln Thr Pro Cys Asn Lys Cys Tyr Cys Lys His Cys Ser Tyr  
 20 25 30

His Cys Leu Val Cys Phe Gln Thr Lys Gly Leu Gly Ile Ser Tyr Gly  
 35 40 45

Arg Lys Lys Arg Arg Gln Arg Arg Ser Thr Pro Pro Ser Ser Glu Ser  
 50 55 60

His Gln Asn Pro Leu Ser Lys Gln Pro Leu Pro Gln Thr Arg Gly Asp  
 65 70 75 80

Gln Thr Gly Ser Glu Glu Gln Lys Lys Lys Val Glu Ser Lys Thr Glu  
 85 90 95

Thr Asp Pro Tyr Asp Trp  
 100

<210> 51  
 <211> 30  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Synthetic  
  
 <400> 51  
 gaattcgag atctgagcca catcgagacc 30

<210> 52  
 <211> 37  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Synthetic  
  
 <400> 52  
 gtcgactcag accacctccg tgccggcctc ctggatc 37

<210> 53  
 <211> 32  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Synthetic  
  
 <400> 53  
 gaattcaagg cttaaagccgg agcaggetct gc 32

<210> 54  
 <211> 36  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Synthetic  
  
 <400> 54  
 gtcgactcac ttcagggctc tcacgaaatc ttcccc 36

<210> 55  
 <211> 36  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Synthetic  
  
 <400> 55  
 ggccgaattc aaggctaaag ccggagcagg ctctgc 36

<210> 56  
 <211> 88  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic

<400> 56  
 aattgtcgac ttatttttttc catttcattgc ggagggttctg aaaccaaatt ttaattctgga 60  
 gettcagggt cttcacgaaa tcttcccc 88

<210> 57  
 <211> 16  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic

<400> 57  
 Arg Gln Ile Lys Ile Trp Phe Gln Asn Arg Arg Met Lys Trp Lys Lys  
 1 5 10 15

<210> 58  
 <211> 36  
 <212> PRT  
 <213> Human immunodeficiency virus type 1

<400> 58  
 Cys Phe Ile Thr Lys Ala Leu Gly Ile Ser Tyr Gly Arg Lys Lys Arg  
 1 5 10 15  
 Arg Gln Arg Arg Arg Pro Pro Gln Gly Ser Gln Thr His Gln Val Ser  
 20 25 30  
 Leu Ser Lys Gln  
 35

<210> 59  
 <211> 14  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic

<400> 59  
 Gly Arg Lys Lys Arg Arg Gln Arg Arg Arg Pro Pro Gln Cys  
 1 5 10

<210> 60  
 <211> 17  
 <212> PRT  
 <213> Human immunodeficiency virus type 1  
 <400> 60

Thr Arg Gln Ala Arg Arg Asn Arg Arg Arg Trp Arg Glu Arg Gln  
 1 5 10 15

Arg

<210> 61  
 <211> 21  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic

<400> 61

Lys Glu Thr Trp Trp Glu Thr Trp Trp Thr Glu Trp Ser Gln Pro Lys  
 1 5 10 15

Lys Lys Arg Lys Val  
 20

<210> 62  
 <211> 7  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic

<400> 62

Pro Lys Lys Lys Arg Lys Val  
 1 5

<210> 63  
 <211> 9  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic

<400> 63

Pro Ala Ala Lys Arg Val Lys Leu Asp  
 1 5



<210> 64  
<211> 12  
<212> PRT  
<213> Human immunodeficiency virus type 1

<400> 64

Gly Arg Lys Lys Arg Arg Gln Arg Arg Arg Ala Pro  
1 5 10

<210> 65  
<211> 8  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic

<400> 65

Pro Leu Leu Lys Lys Ile Lys Gln  
1 5

<210> 66  
<211> 8  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic

<400> 66

Pro Pro Gln Lys Lys Ile Lys Ser  
1 5

<210> 67  
<211> 7  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic

<400> 67

Pro Gln Pro Lys Lys Lys Pro  
1 5

<210> 68  
 <211> 9  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic

<400> 68

Ser Lys Arg Val Ala Lys Arg Lys Leu  
 1 5

<210> 69  
 <211> 5  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic

<400> 69

Gly Arg Arg Arg Arg  
 1 5

<210> 70  
 <211> 155  
 <212> PRT  
 <213> Homo sapiens

<400> 70

Met Ala Ala Gly Ser Ile Thr Thr Leu Pro Ala Leu Pro Glu Asp Gly  
 1 5 10 15

Gly Ser Gly Ala Phe Pro Pro Gly His Phe Lys Asp Pro Lys Arg Leu  
 20 25 30

Tyr Cys Lys Asn Gly Gly Phe Phe Leu Arg Ile His Pro Asp Gly Arg  
 35 40 45

Val Asp Gly Val Arg Glu Lys Ser Asp Pro His Ile Lys Leu Gln Leu  
 50 55 60

Gln Ala Glu Glu Arg Gly Val Val Ser Ile Lys Gly Val Cys Ala Asn  
 65 70 75 80

Arg Tyr Leu Ala Met Lys Glu Asp Gly Arg Leu Leu Ala Ser Lys Cys  
 85 90 95

Val Thr Asp Glu Cys Phe Phe Phe Glu Arg Leu Glu Ser Asn Asn Tyr  
 100 105 110

Asn Thr Tyr Arg Ser Arg Lys Tyr Thr Ser Trp Tyr Val Ala Leu Lys  
 115 120 125

Arg Thr Gly Gln Tyr Lys Leu Gly Ser Lys Thr Gly Pro Gly Gln Lys  
 130 135 140

Ala Ile Leu Phe Leu Pro Met Ser Ala Lys Ser  
 145 150 155

<210> 71  
 <211> 6757  
 <212> DNA  
 <213> Homo sapiens

<400> 71  
 cggccccaga aaacccgagc gagtaggggg cggcgcgcag gagggaggag aactgggggc 60  
 gcgggaggct ggtgggtgtc ggggggtggag atgtagaaga tgtgacgccg cggcccggcg 120  
 ggtgccagat tagcggacgg ctgcccgcgg ttgcaacggg atcccgggcg ctgcagcttg 180  
 ggaggcggct ctccccaggc ggcgtccgcg gagacacca tccgtgaacc ccaggtcccc 240  
 ggccgccggc tcgccgcgca ccagggggccg gcggacagaa gagcggccga gcggctcgag 300  
 gctgggggac cgcgggcgcg gccgcgcgct gccgggcggg aggctggggg gccggggccg 360  
 gggccgtgcc ccggagcggg tcggaggccg gggccggggc cgggggacgg cggtcccccg 420  
 cgcggctcca gcggctcggg gatccccggc gggccccgca gggaccatgg cagccgggag 480  
 catcaccacg ctgcccgcct tgcccagga tggcggcagc ggcgccttcc cgcccggcca 540  
 cttcaaggac cccaagcggc tgtactgcaa aaacgggggc ttcttcctgc gcatccaccc 600  
 cgacggccga gttgacgggg tccgggagaa gagcgaccct cacatcaagc tacaacttca 660  
 agcagaagag agaggagttg tgtctatcaa aggagtgtgt gctaaccgtt acctggctat 720  
 gaaggaagat ggaagattac tggcttctaa atgtgttacg gatgagtgtt tcttttttga 780  
 acgattggaa tctaataact acaatactta ccggtcaagg aaatacacca gttggtatgt 840  
 ggcactgaaa cgaactgggc agtataaact tggatccaaa acaggacctg ggcagaaagc 900  
 tatacttttt cttccaatgt ctgctaagag ctgattttta tggccacatc taatctcatt 960  
 tcacatgaaa gaagaagtat attttagaaa tttgttaatg agagtaaaag aaaataaatg 1020  
 tgtatagctc agtttgata attggtcaaa caatttttta tccagtagta aaatatgtaa 1080  
 ccattgtccc agtaaagaaa aataacaaaa gttgtaaaat gtatatcttc cctttttatat 1140  
 tgcattctgt gttaccacgt gaagcttacc tagagcaatg atctttttca cgcatttgct 1200  
 ttattcgaaa agaggctttt aaaatgtgca tgtttagaaa caaaatttct tcatggaaat 1260  
 catatacatt agaaaatcac agtcagatgt ttaatcaatc caaaatgtcc actattttctt 1320

atgteattteg	ttagttctaca	tgttttctaaa	catataaatg	tgaattttaat	caatttccttt	1380
catagtttta	taattctctg	gcagttcctt	atgatagagt	ttataaaaaca	gtcctgtgta	1440
aactgctgga	agttcttcca	cagtcaggtc	aattttgtca	aacccttctc	tgtaccata	1500
cagcagcagc	ctagcaactc	tgctggtgat	gggagttgta	ttttcagtct	tcgccaggtc	1560
attgagatcc	atccactcac	atcttaagca	ttcttcctgg	caaaaattta	tggatgaatga	1620
atatggccttt	aggcggcaga	tgatatacat	atctgacttc	ccaaaagctc	caggatttgt	1680
gtgctgttgc	cgaataactca	ggacggacct	gaattctgat	tttataccag	tctcttcaaa	1740
aacttctcga	accgctgtgt	ctcctacgta	aaaaaagaga	tgtacaaatc	aataataatt	1800
acacttttag	aaactgtatc	atcaaagatt	ttcagttaaa	gtagcattat	gtaaaggctc	1860
aaaacattac	cctaacaaag	taaagttttc	aatacaaaatt	ctttgccttg	tggatatcaa	1920
gaaatcccaa	aatattttct	taccactgta	aattcaagaa	gcttttgaaa	tgctgaatat	1980
ttctttggct	gctacttgga	ggcttatcta	cctgtacatt	tttggggtca	gctcttttta	2040
acttcttgct	gctctttttc	ccaaaaggta	aaaatataga	ttgaaaagt	aaaacatttt	2100
gcatggctgc	agttcctttg	tttcttgaga	taagattcca	aagaacttag	attcatttct	2160
tcaacaccga	aatgctggag	gtgtttgatc	agttttcaag	aaacttggaa	tataaataat	2220
tttataattc	aacaaaaggt	ttcacatttt	ataagggtga	tttttcaatt	aaatgcaaat	2280
ttgtgtggca	ggatttttat	tgccattaac	atatttttgt	ggctgctttt	tctacacatc	2340
cagatggtcc	ctctaactgg	gctttctcta	attttgtgat	gttctgtcat	tgtctcccaa	2400
agtatttagg	agaagccctt	taaaaagctg	ccttcctcta	ccactttgct	ggaaagcttc	2460
acaattgtca	cagacaaaga	tttttgttcc	aatactcggt	ttgcctctat	ttttcttggt	2520
tgtcaaatag	taaatgatat	ttgcccttgc	agtaattcta	ctggtgaaaa	acatgcaaag	2580
aagaggaagt	cacagaaaca	tgtctcaatt	cccatgtgct	gtgactgtag	actgtcttac	2640
catagactgt	cttaccatc	ccctggatat	gctcttggtt	tttccctcta	atagctatgg	2700
aaagatgcat	agaaagagta	taatgtttta	aaacataagg	cattcatctg	ccatttttca	2760
attacatgct	gacttcctt	acaattgaga	tttgcccata	ggttaaacat	ggtagaaac	2820
aactgaaagc	ataaaagaaa	aatctaggcc	gggtgcagtg	gctcatgcct	atattccctg	2880
cactttggga	ggccaaagca	ggaggatcgc	ttgagcccag	gagttcaaga	ccaacctggt	2940
gaaaccccg	ctctacaaaa	aaacacaaaa	aatagccagg	catggtggcg	tgtacatgtg	3000
gtctcagata	cttgggaggc	tgagggtggga	gggttgatca	cttgaggctg	agagggtcaag	3060
gttgacgtga	gccataatcg	tgccactgca	gtccagccta	ggcaacagag	tgagactttg	3120
tctcaaaaaa	agagaaattt	tccttaataa	gaaaagtaat	ttttactctg	atgtgcaata	3180

gatttggatat	taaattttatt	attttaagatg	gtagcactag	tcttaaatgg	tataaaaatat	3240
ccoctaacat	gtttaaatgt	ccattttttat	tcattatgct	ttgaaaaata	attatgggga	3300
aatacatggt	tggtattaaa	tttattatta	aagatagtag	cactagtctt	aaatttgata	3360
taacatctcc	taacttggtt	aaatgtccat	ttttattctt	tatgcttgaa	aataaattat	3420
ggggatccta	tttagctctt	agtaccacta	atcaaaagtt	cggcatgtag	ctcatgatct	3480
atgctgtttc	tatgtcgtgg	aagcaccgga	tgggggtagt	gagcaaactt	gccctgctca	3540
gcagtcacca	tagcagctga	ctgaaaatca	gcactgcctg	agtagttttg	atcagtttaa	3600
cttgaatcac	taactgactg	aaaattgaat	gggcaaataa	gtgcttttgt	ctccagagta	3660
tgcgggagac	ccttccacct	caagatggat	atttcttccc	caaggatttc	aagatgaatt	3720
gaaattttta	atcaagatag	tgtgctttat	tctgttgtat	tttttattat	tttaatatat	3780
tgtaagccaa	actgaaataa	catttgctgt	tttatagggt	tgaagaacat	aggaaaaact	3840
aagagggttt	gtttttat	ttgctgatga	agagatatgt	ttaaatatgt	tgtattgttt	3900
tgtttagtta	caggacaata	atgaaatgga	gttttatatt	gttatttcta	ttttgttata	3960
tttaataata	gaattagatt	gaaataaaaat	ataatgggaa	ataatctgca	gaatgtgggt	4020
ttcctgggtg	tctctctgac	tctagtgcac	tgatgatctc	tgataaggct	cagctgcttt	4080
atagttctct	ggctaatagc	gcagatactc	ttcctgccag	tggttaatacg	attttttaag	4140
aaggcagttt	gtcaatttta	atcttggtga	tacctttata	ctcttagggg	attattttat	4200
acaaaagcct	tgaggattgc	attctatttt	ctatatgacc	ctcttgatat	ttaaaaaaca	4260
ctatggataa	caattcttca	tttacctagt	attatgaaag	aatgaaggag	ttcaaacaaa	4320
tgtgtttccc	agttaactag	ggtttactgt	ttgagccaat	ataaatgttt	aactgtttgt	4380
gatggcagta	ttcctaaagt	acattgcatg	ttttcctaaa	tacagagttt	aaataatttc	4440
agtaattctt	agatgattca	gcttcacat	taagaatatc	ttttgtttta	tgttgagtta	4500
gaaatgcctt	catatagaca	tagtctttca	gacctctact	gtcagttttc	atttctagct	4560
gcttteaggg	ttttatgaat	tttcaggcaa	agctttaatt	tatactaagc	ttaggaagta	4620
tggetaatgc	caacggcagt	ttttttcttc	ttaattecac	atgaetgagg	catatatgat	4680
ctctgggtag	gtgagttggt	gtgacaacca	caagcacttt	tttttttttt	aaagaaaaaa	4740
aggtagttaa	tttttaata	tctggacttt	aagaaggatt	ctggagtata	cttaggectg	4800
aaattatata	tatttggttt	ggaaatgtgt	ttttcttcaa	ttacatctac	aagtaagtac	4860
agctgaaatt	cagaggacct	ataagagttc	acatgaaaaa	aatcaattca	tttgaaaagg	4920
caagatgcag	gagagaggaa	gccttgcaaa	cctgcagact	gctttttgcc	caatatagat	4980
tgggtaaggc	tgcaaaacat	aagcttaatt	agctcacatg	ctctgctctc	acgtggcacc	5040

agtggatagt	gtgagagaat	taggetgtag	aacaaatgga	ettctctttc	agcatcga	5100
ccactacaaa	atcatctttt	atatcaacag	aagaataagc	ataaactaag	caaaagggtca	5160
ataagtacct	gaaaccaaga	ttggctagag	atatacttta	atgcaatcca	ttttctgatg	5220
gattgttacg	agttggctat	ataatgtatg	tatgggtattt	tgattttgtg	aaaagtttta	5280
aaaatcaagc	tttaagtaca	tggacatttt	taaataaaat	atttaaagac	aatttagaaa	5340
attgccttaa	tatcattggt	ggctaaatag	aataggggac	atgcatatta	aggaaaagg	5400
catggagaaa	taatattggt	atcaaacaaa	tacattgatt	tgatcatgata	cacattgaat	5460
ttgatccaat	agtttaagga	ataggttagga	aaatttggtt	tctatttttc	gatttcctgt	5520
aaatcagtga	cataaataat	tcttagctta	ttttatattt	ccttgtctta	aatactgagc	5580
tcagtaagtt	gtgttagggg	attattttct	agttgagact	ttcttatatg	acattttact	5640
atgttttgac	ttcctgacta	ttaaaaataa	atagtagaaa	caattttcat	aaagtgaaga	5700
attatataat	cactgcttta	taactgactt	tattatattt	atttcaaagt	tcatttaaag	5760
gtactatttc	atcctctgtg	atggaatgg	caggaatttg	ttttctcata	gtttaattcc	5820
aacaacaata	ttagtcgtat	ccaaaataac	ctttaatgct	aaactttact	gatgtatate	5880
caaagcttct	ccttttcaga	cagattaate	cagaagcagt	cataaacaga	agaatagggtg	5940
gtatgttctt	aatgatatta	tttctactaa	tgggaataaac	tgtaatatta	gaaattatgc	6000
tgctaattat	atcagctctg	aggtaatttc	tgaaatgttc	agactcagtc	ggaacaaatt	6060
ggaaaattta	aatttttatt	cttagctata	aagcaagaaa	gtaaacacat	taatttcctc	6120
aacattttta	agccaattaa	aaatataaaa	gatacacacc	aatatcttct	tcaggtctctg	6180
acaggcctcc	tggaaacttc	cacatatttt	tcaactgcag	tataaagtca	gaaaataaag	6240
ttaacataac	tttcactaac	acacacatat	gtagatttca	caaaatccac	ctataattgg	6300
tcaaagtgg	tgagaatata	tttttttagta	attgcatgca	aaatttttct	agcttccatc	6360
ctttctccct	cgtttcttct	ttttttgggg	gagctggtaa	ctgatgaaat	cttttcccac	6420
cttttctctt	caggaaatat	aagtgggttt	gtttgggtta	cgtgatacat	tctgtatgaa	6480
tgaaacattg	gaggggaaac	tctactgaat	ttctgtaatt	taaaatattt	tgctgctagt	6540
taactatgaa	cagatagaag	aatcttacag	atgctgctat	aaataagtag	aaaatataaa	6600
tttcatcact	aaaatatgct	attttaaaat	ctatttccta	tattgtattt	ctaatcagat	6660
gtattactct	tattatttct	attgtatgtg	ttaatgattt	tatgtaaaaa	tgtaattgct	6720
tttcatgagt	agtatgaata	aaattgatta	gtttgtg			6757

<210> 72  
 <211> 513  
 <212> PRT  
 <213> Homo sapiens

<400> 72

Met Phe Ala Asp Arg Trp Leu Phe Ser Thr Asn His Lys Asp Ile Gly  
 1 5 10 15

Thr Leu Tyr Leu Leu Phe Gly Ala Trp Ala Gly Val Leu Gly Thr Ala  
 20 25 30

Leu Ser Leu Leu Ile Arg Ala Glu Leu Gly Gln Pro Gly Asn Leu Leu  
 35 40 45

Gly Asn Asp His Ile Tyr Asn Val Ile Val Thr Ala His Ala Phe Val  
 50 55 60

Met Ile Phe Phe Met Val Met Pro Ile Met Ile Gly Gly Phe Gly Asn  
 65 70 75 80

Trp Leu Val Pro Leu Met Ile Gly Ala Pro Asp Met Ala Phe Pro Arg  
 85 90 95

Met Asn Asn Met Ser Phe Trp Leu Leu Pro Pro Ser Leu Leu Leu Leu  
 100 105 110

Leu Ala Ser Ala Met Val Glu Ala Gly Ala Gly Thr Gly Trp Thr Val  
 115 120 125

Tyr Pro Pro Leu Ala Gly Asn Tyr Ser His Pro Gly Ala Ser Val Asp  
 130 135 140

Leu Thr Ile Phe Ser Leu His Leu Ala Gly Val Ser Ser Ile Leu Gly  
 145 150 155 160

Ala Ile Asn Phe Ile Thr Thr Ile Ile Asn Met Lys Pro Pro Ala Met  
 165 170 175

Thr Gln Tyr Gln Thr Pro Leu Phe Val Trp Ser Val Leu Ile Thr Ala  
 180 185 190

Val Leu Leu Leu Leu Ser Leu Pro Val Leu Ala Ala Gly Ile Thr Met  
 195 200 205

Leu Leu Thr Asp Arg Asn Leu Asn Thr Thr Phe Phe Asp Pro Ala Gly  
 210 215 220

Gly Gly Asp Pro Ile Leu Tyr Gln His Leu Phe Trp Phe Phe Gly His  
 225 230 235 240  
 Pro Glu Val Tyr Ile Leu Ile Leu Pro Gly Phe Gly Met Ile Ser His  
 245 250 255  
 Ile Val Thr Tyr Tyr Ser Gly Lys Lys Glu Pro Phe Gly Tyr Met Gly  
 260 265 270  
 Met Val Trp Ala Met Met Ser Ile Gly Phe Leu Gly Phe Ile Val Trp  
 275 280 285  
 Ala His His Met Phe Thr Val Gly Met Asp Val Asp Thr Arg Ala Tyr  
 290 295 300  
 Phe Thr Ser Ala Thr Met Ile Ile Ala Ile Pro Thr Gly Val Lys Val  
 305 310 315 320  
 Phe Ser Trp Leu Ala Thr Leu His Gly Ser Asn Met Lys Trp Ser Ala  
 325 330 335  
 Ala Val Leu Trp Ala Leu Gly Phe Ile Phe Leu Phe Thr Val Gly Gly  
 340 345 350  
 Leu Thr Gly Ile Val Leu Ala Asn Ser Ser Leu Asp Ile Val Leu His  
 355 360 365  
 Asp Thr Tyr Tyr Val Val Ala His Phe His Tyr Val Leu Ser Met Gly  
 370 375 380  
 Ala Val Phe Ala Ile Met Gly Gly Phe Ile His Trp Phe Pro Leu Phe  
 385 390 395 400  
 Ser Gly Tyr Thr Leu Asp Gln Thr Tyr Ala Lys Ile His Phe Thr Ile  
 405 410 415  
 Met Phe Ile Gly Val Asn Leu Thr Phe Phe Pro Gln His Phe Leu Gly  
 420 425 430  
 Leu Ser Gly Met Pro Arg Arg Tyr Ser Asp Tyr Pro Asp Ala Tyr Thr  
 435 440 445  
 Thr Trp Asn Ile Leu Ser Ser Val Gly Ser Phe Ile Ser Leu Thr Ala  
 450 455 460  
 Val Met Leu Met Ile Phe Met Ile Trp Glu Ala Phe Ala Ser Lys Arg  
 465 470 475 480



Lys Val Leu Met Val Glu Glu Pro Ser Met Asn Leu Glu Trp Leu Tyr  
485 490 495

Gly Cys Pro Pro Pro Tyr His Thr Phe Glu Glu Pro Val Tyr Met Lys  
500 505 510

Ser

<210> 73  
<211> 1542  
<212> DNA  
<213> Homo sapiens

<400> 73  
atgttcgccg accgttgact attctctaca aaccacaaag acattggaac actataccta 60  
ttattcgccg catgagctgg agtcctaggc acagctctaa gcctccttat tcgagccgag 120  
ctgggccagc caggcaacct tctaggtaac gaccacatct acaacgttat cgtcacagcc 180  
catgcatttg taataatctt cttcatagta atacccatca taatcggagg ctttggcaac 240  
tgactagttc ccctaataat cggtgcccc gatatggcgt ttccccgcat aaacaacata 300  
agcttctgac tcttacctcc ctctctccta ctctgctcg catctgctat agtggaggcc 360  
ggagcaggaa caggttgaac agtctaccct cccttagcag ggaactactc ccaccctgga 420  
gcctccgtag acctaaccat cttctcctta cacctagcag gtgtctctc tatcttaggg 480  
gccatcaatt tcatcacaac aattatcaat ataaaacccc ctgccataac ccaataccaa 540  
acgccccctc tcgtctgac cgctctaata acagcagtc tacttctcct atctctccca 600  
gtcctagctg ctggcatcac tatactacta acagaccgca acctcaacac caccttcttc 660  
gaccccgccg gaggaggaga cccattcta taccaacacc tattctgatt tttcggtcac 720  
cctgaagttt atattcttat cctaccaggc ttcggaataa tctcccatat tgtaacttac 780  
tactccggaa aaaaagaacc atttggatac ataggtatgg tctgagctat gatatcaatt 840  
ggcttcctag ggtttatcgt gtgagcacac catatattta cagtaggaat agacgtagac 900  
acacgagcat atttcacctc cgctaccata atcatcgta tccccaccgg cgtcaaagta 960  
tttagctgac tcgccacact ccacggaagc aatatgaaat gatctgctgc agtgctctga 1020  
gccctaggat tcatctttct tttcacgta ggtggcctga ctggcattgt attagcaaac 1080  
tcatcactag acatcgact acacgacacg tactacgttg tagctcactt ccactatgtc 1140  
ctatcaatag gagctgtatt tgccatcata ggaggcttca ttcactgatt tcccctattc 1200  
tcaggctaca ccctagacca aacctacgcc aaaatccatt tcaactatcat attcatcggc 1260  
gtaaatctaa ctttcttccc acaacacttt ctcggcctat ccggaatgcc ccgacgttac 1320

teggactacc ccgatgcata caccacatga aacatectat catctgtagg ctcatteatt 1380  
 tctctaacag cagtaatatt aataattttc atgatttgag aagccttcgc ttcgaagcga 1440  
 aaagtcctaa tagtagaaga accctccata aacctggagt gactatatgg atgcccccca 1500  
 ccctaccaca cattcgaaga acccggtatac ataaaaatcta ga 1542

<210> 74  
 <211> 219  
 <212> PRT  
 <213> Homo sapiens

<400> 74

Met Ser Ser His Leu Val Glu Pro Pro Pro Pro Leu His Asn Asn Asn  
 1 5 10 15

Asn Asn Cys Glu Glu Asn Glu Gln Ser Leu Pro Pro Pro Ala Gly Leu  
 20 25 30

Asn Ser Ser Trp Val Glu Leu Pro Met Asn Ser Ser Asn Gly Asn Asp  
 35 40 45

Asn Gly Asn Gly Lys Asn Gly Gly Leu Glu His Val Pro Ser Ser Ser  
 50 55 60

Ser Ile His Asn Gly Asp Met Glu Lys Ile Leu Leu Asp Ala Gln His  
 65 70 75 80

Glu Ser Gly Gln Ser Ser Ser Arg Gly Ser Ser His Cys Asp Ser Pro  
 85 90 95

Ser Pro Gln Glu Asp Gly Gln Ile Met Phe Asp Val Glu Met His Thr  
 100 105 110

Ser Arg Asp His Ser Ser Gln Ser Glu Glu Glu Val Val Glu Gly Glu  
 115 120 125

Lys Glu Val Glu Ala Leu Lys Lys Ser Ala Asp Trp Val Ser Asp Trp  
 130 135 140

Ser Ser Arg Pro Glu Asn Ile Pro Pro Lys Glu Phe His Phe Arg His  
 145 150 155 160

Pro Lys Arg Ser Val Ser Leu Ser Met Arg Lys Ser Gly Ala Met Lys  
 165 170 175

Lys Gly Gly Ile Phe Ser Ala Glu Phe Leu Lys Val Phe Ile Pro Ser  
 180 185 190

Leu Phe Leu Ser His Val Leu Ala Leu Gly Leu Gly Ile Tyr Ile Gly  
 195 200 205

Lys Arg Leu Ser Thr Pro Ser Ala Ser Thr Tyr  
 210 215

<210> 75  
 <211> 660  
 <212> DNA  
 <213> Homo sapiens

<400> 75  
 atgttgtccc acctagtcca gccgcgcgcg cccctgcaca acaacaacaa caactgagag 60  
 gaaaatgagc agtctctgcc cccgccggcc ggctcaaca gttcttgggt ggagctaccc 120  
 atgaacagca gcaatggcaa tgataatggc aatgggaaaa atggggggct ggaacacgta 180  
 ccatcctcat cctccatcca caatggagac atggagaaga ttcttttggg tgcacaacat 240  
 gaatcaggac agagtagttc cagaggcagt tctcaetgtg acagcccttc gccacaagaa 300  
 gatgggcaga tcatgtttga tgtggaaatg cacaccagca gggaccatag ctctcagtca 360  
 gaagaagaag ttgtagaagg agagaaggaa gtcgaggttt tgaagaaaag tgcggactgg 420  
 gtatcagact ggtccagtag acccgaaaac attccaceca aggagttcca cttcagacac 480  
 cctaaacgtt ctgtgtcttt aagcatgagg aaaagtggag ccatgaagaa aggggggtatt 540  
 ttctccgcag aatttttgaa ggtgttcatt ccatctctct tccttttctca tgttttggct 600  
 ttggggctag gcatctatat tggaaagcga ctgagcacac cctctgccag cacctactga 660

<210> 76  
 <211> 194  
 <212> PRT  
 <213> Homo sapiens

<400> 76

Met Ser Gln Asn Gly Ala Pro Gly Met Gln Glu Glu Ser Leu Gln Gly  
 1 5 10 15

Ser Trp Val Glu Leu His Phe Ser Asn Asn Gly Asn Gly Gly Ser Val  
 20 25 30

Pro Ala Ser Val Ser Ile Tyr Asn Gly Asp Met Glu Lys Ile Leu Leu  
 35 40 45

Asp Ala Gln His Glu Ser Gly Arg Ser Ser Ser Lys Ser Ser His Cys  
 50 55 60

Asp Ser Pro Pro Arg Ser Gln Thr Pro Gln Asp Thr Asn Arg Ala Ser  
65 70 75 80

Glu Thr Asp Thr His Ser Ile Gly Glu Lys Asn Ser Ser Gln Ser Glu  
85 90 95

Glu Asp Asp Ile Glu Arg Arg Lys Glu Val Glu Ser Ile Leu Lys Lys  
100 105 110

Asn Ser Asp Trp Ile Trp Asp Trp Ser Ser Arg Pro Glu Asn Ile Pro  
115 120 125

Pro Lys Glu Phe Leu Phe Lys His Pro Lys Arg Thr Ala Thr Leu Ser  
130 135 140

Met Arg Asn Thr Ser Val Met Lys Lys Gly Gly Ile Phe Ser Ala Glu  
145 150 155 160

Phe Leu Lys Val Phe Leu Pro Ser Leu Leu Leu Ser His Leu Leu Ala  
165 170 175

Ile Gly Leu Gly Ile Tyr Ile Gly Arg Arg Leu Thr Thr Ser Thr Ser  
180 185 190

Thr Phe

<210> 77  
<211> 585  
<212> DNA  
<213> Homo sapiens

<400> 77  
atgtcgcaga acggagcgcc cgggatgcag gaggagagcc tgcagggctc ctgggtagaa 60  
ctgcacttca gcaataatgg gaacggggggc agcgttccag cctcggtttc tatttataat 120  
ggagacatgg aaaaaatact gctggacgca cagcatgagt ctggacggag tagctccaag 180  
agctctcact gtgacagccc acctcgctcg cagacaccac aagataccaa cagggcttct 240  
gaaacagata cccatagcat tggagagaaa aacagctcac agtctgagga agatgatatt 300  
gaaagaagga aagaagttga aagcatcttg aagaaaaact cagattggat atgggattgg 360  
tcaagtcggc cggaaaatat tcccccaag gagttcctct ttaaacaccc gaagcgcacg 420  
gccaccctca gcatgaggaa cacgagcgtc atgaagaaag ggggcatatt ctctgcagaa 480  
tttctgaaag ttttccttec atctctgctg ctctctcatt tgetggccat cggattgggg 540  
atctatattg gaaggcgtct gacaacctcc accagcacct tttga 585

<210> 78  
 <211> 219  
 <212> PRT  
 <213> Homo sapiens

<400> 78

Met Glu Tyr Leu Ser Ala Leu Asn Pro Ser Asp Leu Leu Arg Ser Val  
 1 5 10 15

Ser Asn Ile Ser Ser Glu Phe Gly Arg Arg Val Trp Thr Ser Ala Pro  
 20 25 30

Pro Pro Gln Arg Pro Phe Arg Val Cys Asp His Lys Arg Thr Ile Arg  
 35 40 45

Lys Gly Leu Thr Ala Ala Thr Arg Gln Glu Leu Leu Ala Lys Ala Leu  
 50 55 60

Glu Thr Leu Leu Leu Asn Gly Val Leu Thr Leu Val Leu Glu Glu Asp  
 65 70 75 80

Gly Thr Ala Val Asp Ser Glu Asp Phe Phe Gln Leu Leu Glu Asp Asp  
 85 90 95

Thr Cys Leu Met Val Leu Gln Ser Gly Gln Ser Trp Ser Pro Thr Arg  
 100 105 110

Ser Gly Val Leu Ser Tyr Gly Leu Gly Arg Glu Arg Pro Lys His Ser  
 115 120 125

Lys Asp Ile Ala Arg Phe Thr Phe Asp Val Tyr Lys Gln Asn Pro Arg  
 130 135 140

Asp Leu Phe Gly Ser Leu Asn Val Lys Ala Thr Phe Tyr Gly Leu Tyr  
 145 150 155 160

Ser Met Ser Cys Asp Phe Gln Gly Leu Gly Pro Lys Lys Val Leu Arg  
 165 170 175

Glu Leu Leu Arg Trp Thr Ser Thr Leu Leu Gln Gly Leu Gly His Met  
 180 185 190

Leu Leu Gly Ile Ser Ser Thr Leu Arg His Ala Val Glu Gly Ala Glu  
 195 200 205

Gln Trp Gln Gln Lys Gly Arg Leu His Ser Tyr  
 210 215

<210> 79  
 <211> 660  
 <212> DNA  
 <213> Homo sapiens

<400> 79  
 atggaggtacc tctcagctct gaaccccagt gacttactca ggtcagtatc taatataagc 60  
 tcggagtttg gacggagggt ctggacctca gctccaccac cccagcgacc tttccgtgtc 120  
 tgtgatcaca agcgggacct ccggaaaagg ctgacagctg ccacccgccca ggagctgcta 180  
 gccaaagcat tggagaccct actgctgaat ggagtgctaa ccctgggtgct agaggaggat 240  
 ggaactgcag tggacagtga ggacttcttc cagctgctgg aggatgacac gtgcctgatg 300  
 gtgttgccagt ctggtcagag ctggagccct acaaggagtg gagtgctgtc atatggcctg 360  
 ggacggggaga ggcccaagca cagcaaggac atcgcccgat tcacctttga cgtgtacaag 420  
 caaaaccctc gagacctctt tggcagcctg aatgtcaaag ccacattcta cgggctctac 480  
 tctatgagtt gtgactttca aggacttggc ccaaagaaaag tactcagggg gtccttcgt 540  
 tggacctcca cactgctgca aggcctgggc catatgttgc tgggaatttc ctccaccctt 600  
 cgtcatgcag tggagggggc tgagcagtgg cagcagaagg gccgcctcca ttctactaa 660

<210> 80  
 <211> 242  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic

<400> 80

Gln Val His Leu Ile Gln Ala Gly Pro Gly Leu Val Gln Pro Ser Gln  
 1 5 10 15

Ser Leu Ser Ile Thr Cys Thr Val Ser Gly Leu Ser Leu Ile Asn Tyr  
 20 25 30

Gly Val His Trp Val Arg Gln Ser Pro Gly Lys Gly Leu Glu Trp Leu  
 35 40 45

Gly Val Ile Trp Ser Gly Gly Ser Thr Asp Tyr Asn Ala Ala Phe Ile  
 50 55 60

Ser Arg Leu Ser Ile Ser Lys Asp Asn Ser Lys Ser Gln Val Phe Phe  
 65 70 75 80

Lys Met Asn Ser Leu Gln Gly Asn Asp Thr Ala Ile Tyr Tyr Cys Ala  
85 90 95

Arg Asn Ser Glu Leu Gly Ala Met Asp Tyr Trp Ala Gln Gly Ile Ser  
100 105 110

Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Ser Gly  
115 120 125

Gly Gly Gly Ser Asp Ile Val Leu Thr Gln Ser Pro Ala Ser Leu Ala  
130 135 140

Val Ser Leu Gly Gln Arg Ala Thr Ile Ser Cys Arg Ala Ser Lys Ser  
145 150 155 160

Val Ser Thr Ser Gly Tyr Ser Tyr Met His Trp Asn Gln Gln Lys Pro  
165 170 175

Gly Gln Pro Pro Arg Leu Leu Ile Tyr Leu Val Ser Asn Leu Glu Ser  
180 185 190

Gly Val Pro Ala Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr  
195 200 205

Leu Asn Ile His Pro Val Glu Glu Glu Asp Ala Ala Thr Tyr Tyr Cys  
210 215 220

Gln His Ile Arg Glu Ala Tyr Thr Phe Gly Gly Gly Thr Lys Leu Glu  
225 230 235 240

Ile Lys

<210> 81  
<211> 756  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic

<400> 81  
gcaataactcc atgggccagg tgcactctgat tcaggcgggc ccgggcctgg tgcagccgag 60  
ccagagcctg agcattacct gcaccgtgag cggcctgagc ctgattaact atggcgtgca 120  
ttgggtgcgt cagagcccgg gcaaaggcct ggaatggetg ggcgtgattt ggagcggcgg 180

cagcaccgat tataacgcgg cgtttattag cgtctgagc attagcaaag ataacagcaa	240
aagccagggtg ttttttaaaa tgaacagcct gcagggcaac gataccgcga tttattattg	300
cgcgcgtaac agcgaactgg gcgcgatgga ttattgggcg cagggcatta gcgtgaccgt	360
gagcagcggc ggcggcggca gcggcggcgg cggcagcggc ggcggcggca gcgatattgt	420
gctgaccag agcccggcga gcctggcggg gagcctgggc cagcgtgcga ccattagctg	480
ccgtgcgagc aaaagcgtga gcaccagcgg ctatagctat atgcattgga accagcagaa	540
accgggccag ccgccgcgtc tgctgattta tctggtgagc aacctggaaa gcggcgtgcc	600
ggcgcgtttt agcggcagcg gcagcggcac cgattttacc ctgaacattc atccggtgga	660
agaagaagat gcggcgacct attattgcca gcatattcgt gaagcgtata cctttggcgg	720
cggcaccaaaa ctggaaatta aactcgaggc atagcc	756